

MARINE REVIEW.

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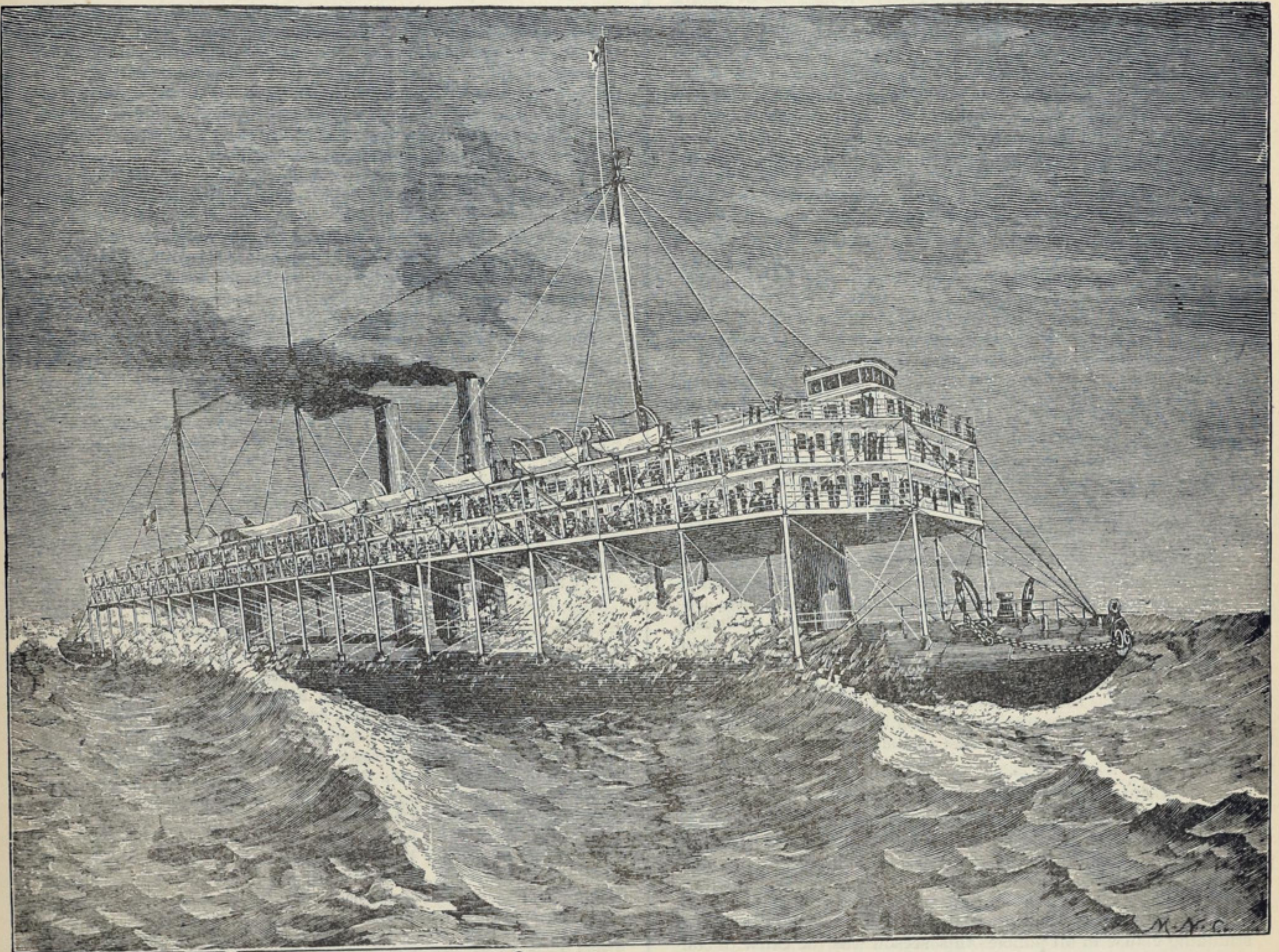
No Rebate on the Tonnage Assessment.

It was said in connection with the organization of the new Lake Carriers' Association at Detroit last week that, although the full assessment of 4 cents a ton will be charged to all vessels in the association, a rebate will be granted at the close of the season to vessels not trading through the rivers. This was a mistake. No rebate will be granted to vessels in the association on this account. When the matter of assessment was under

be paid by all vessels and to include the cost of maintaining private lights.

Whaleback Passenger Boats.

The curious craft pictured on this page is not the McDougall passenger whaleback proposed in connection with the World's Fair traffic on Lake Michigan. It is a design by an eastern architect and as yet exists only on paper. The design



discussion it was agreed that it would not be safe to place the assessment for the general expense of the association below 3½ cents, with the private lights still to be provided for. Sentiment was in favor of making one assessment to cover all expenses as well as private lights, and a motion to make the rate 4½ cents caused an earnest discussion. It was held that vessels in the Lake Michigan trade might remain out of the association unless the regular assessment and that for private lights was separated or the sum of both reduced. It was finally agreed that the assessment should be 4 cents, that amount to

of the big McDougall whaleback, which is planned to carry seven or eight thousand excursionists, contains two tiers of cabins but they are close to the whaleback hull. Through an arrangement now about complete with the fair management Capt. Alex McDougall and some of the capitalists interested with him in the large company will engage with Chicago people in the business of carrying passengers to and from the fair grounds at Chicago, but the big passenger boat will not be built. Other smaller boats suited to this special service will be built, embodying the whaleback idea. The illustration is from the Buffalo Illustrated Express.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, ILL., May 5.

For the first time this season the movement of grain was on Tuesday commensurate with the stocks in Chicago elevators. When it is considered that three-quarters of last year's corn crop is still in the hands of the farmer, Tuesday's business is a forecast of what will be done later in the season when Europe and the east seriously begin to buy corn. For three weeks since navigation opened Chicago has been doing what vessel agents call a "chicken feed" business in grain. The aggregate charters during that time were very much smaller than the average business during the season of navigation. When at last a large fleet happened to be on the market at the same time it was fortunate that grain had finally begun to move freely. Predictions in particular are just now very risky, as the grain bids to go by fits and starts, but in general it is very safe to say that the volume of business this season is going to be far larger than it has ever been before in the city's history.

Why is it that vessel charters can not be reported at Duluth? At Buffalo, at Cleveland and Chicago business is not done on the sly, as it seems to be at the head of Lake Superior. Occasionally at Cleveland some chartering is done "under the hat," but the condition of the market is known to those who try to keep posted. Here the charters are given out toward the close of 'change each day and information is eagerly sought by shippers, newspaper men and even the speculators. It is known what has been paid this boat and that and there is very little secrecy about it. At Duluth it is entirely different this spring. A newspaper man representing the largest newspaper of the northwest is given one figure as the rate of freight, when in fact a half or a quarter of a cent better is bid all around the lakes. It is annoying to receive a dispatch from Duluth that 3 cents is the best rate of the day, and then to go on 'change and be shown dispatches to vessel owners offering 3½ cents. The same thing was done last season. The report sent out from Duluth was absolutely untrustworthy as to the condition of the market. It might be unjust to even hint at crookedness, but some way or another when there is so much secrecy and closed doors and so many statements to the press which are not true, it does not look well.

The contract for the world's fair transportation has been let to a syndicate of ten men, among whom are Hugh MacMillan, T. T. Morford and C. A. Macdonald of Chicago, Capt. McDougall and others interested in the American Steel Barge Company. The plans of the syndicate are rather embryonic, it is said. One plan is to organize a stock company of \$1,000,000, which is to build the boats and transform some of old ones. It is said that two whale-back passenger boats will be built on plans greatly modified and that the Thomas W. Palmer and William Livingston Jr., will be made into passenger steamers next season. It may be that the syndicate, after spending a million, or even a half million in preparing for the big show, will have enough money left for a good sized divvy. That is a question for the people who are putting up their good money to decide. It would not be surprising if the company went at it on so grand a scale that some of those now interested would quietly drop out.

Nothing has caused more general satisfaction among Chicago vessel owners than the successful organization of the new Lake Carriers' Association. Dozens of owners have expressed themselves that the only thing to do has been done. But there is one warning. If a shipping office is to be established in Chicago, half hearted plans will not do. For two seasons vessel owners have endeavored to establish shipping offices here but both times there was not enough effort and determination put forth to make them a success. It is not going to be boys' play here. The Union is flushed with victory and can turn many a trick that the innocent vessel owners know nothing of. To go at it in the same old feeble way will result only in the useless expenditure of money and ultimate defeat.

Committee Report on Mutual Insurance.

At the Detroit meeting of the vessel owners, at which steps were first taken for the organization of the new Lake Carriers' Association, a committee, consisting of John Rice and P. P. Miller of Buffalo and James Corrigan and H. A. Hawgood of Cleveland, was appointed to investigate the subject of hull insurance. The action of the organized underwriters in inserting the river stranding clause in all policies this season was the cause of considerable discussion, in which the hull insurance business generally was criticised. Following is the report of the committee, which has been prepared for the consideration of the vessel owners:

To the Lake Vessel Owners:—Your committee appointed at the vessel owners' meeting held in Detroit April 15, 1892, to consider and report upon a plan for the protection of vessel owners of the great lakes against the increasing exactions of the marine insurance companies, respectfully report as follows:

That the encroachments of the insurance companies doing business on the lakes, both in the way of excessive premiums on certain classes of risks and unjust limitation upon their liability in case of loss, have reached a point where we believe vessel owners should protect themselves by the formation of a mutual marine insurance company. Such a company should be organized

under the laws of a state where the statutes relating to the formation of mutual insurance companies and their taxation may be found to be most favorable, and should be a mutual company with a capital stock of about \$300,000. This stock should be subscribed for by vessel owners and should be fairly apportioned and allotted among all subscribers therefor. The stock should be entitled to receive 10 per cent. annually in dividends out of the profits of the company before any division of profits among the insured. After such 10 per cent is paid to the stockholders, the remaining profits should be divided among the insured and paid in scrip dividends, drawing a low rate of interest and payable at the end of three years from their date of issue. By this means the profits of the company would accumulate and be retained in the treasury, thus increasing the fund available for the payment of extraordinary losses and guaranteeing to policy holders the soundness of their policies. The company would have for the payment of losses: First, the current receipts for premiums; second, the profits of three previous seasons; third, the capital stock of \$300,000.

The advantages to be gained by the formation of such a company are twofold:

1. Vessel owners insuring themselves would issue to members a fair and reasonable policy, free from ambiguous conditions and unfair limitations on liability.

2. Cheaper insurance could be furnished by the enormous saving in the expense of doing business. Commissions of general agents and local agents and salaries of general officers, which enter so largely into the cost of marine insurance under the present system, would be reduced to a minimum. The profits of lake marine insurance now divided among the stockholders of the stock companies would in a mutual company be returned to the vessel owners. Aside from these two items, both of which are large, there might reasonably be expected a considerable saving from the soundness of the principles on which a mutual company would transact its business. It would have every motive to avoid undesirable risks, while under the practice of the stock companies the agents who are interested in commissions on premiums are directly interested against their companies in taking undesirable business.

We think that such an insurance company could well afford to settle losses without charging one-third new for old in the case of A1 vessels up to seven years of age, and that vessels of this class from seven to ten years of age should not pay to exceed one-sixth new for old.

Figures will be presented herewith to show that the stock companies are exacting excessive premiums and making large profits and your attention will also be called to the success of the mutual companies in the business of marine insurance. The marked success of the New England manufacturers' fire insurance companies is also called to your attention as illustrative of the soundness of the principles of mutual insurance. These principles are three in number:

1. Fair policies.
2. Low salaries and expenses and the saving of enormous commissions of agents.
3. An entire absence of a motive on the part of any officer or agent of the company to saddle undesirable business upon it.

JOHN RICE,
P. P. MILLER,
JAMES CORRIGAN,
H. A. HAWGOOD,
Committee.

Official Numbers and Tonnage.

The bureau of navigation assigned official numbers to the following lake vessels during the two weeks ending April 30: Steam—Catherine, No. 126,849, tonnage gross 46.79, net 30.98, Chicago; Corona, No. 126,850, tonnage gross 27.91, net 13.96, Duluth; John H. Jeffrey, Jr., No. 77,021, tonnage gross 12.02, net 6.01, Duluth; Mogul, No. 92,415, tonnage gross 23.24, net 13.95, Sandusky; Outing, No. 155,223, tonnage gross 18.98, net 10.40, Port Huron; P. Peckinger, No. 150,577, tonnage gross 42.58, net 21.29, Milwaukee; Andaste, Marquette, Mich., 1,504.46 tons gross, 1,256.28 net, No. 106,926; Iroquois, Port Huron, Mich., 1,698.50 tons gross, 1,496.51 net, No. 100,524; Harvey J. Kendall, Cleveland, 398.80 tons gross, 264.01 net, No. 96,166; Tam O'Shanter, Detroit, 23.60 tons gross, 11.80 net, No. 145,619; Allie E. Shipman, Marquette, Mich., 30.89 tons gross, 19.76, No. 106,925. Sail—David Dixon, No. 157,341, tonnage gross 25.68, net 24.40, Detroit; Abraham Smith, Port Huron, Mich., 372.92 tons gross, 354.28 net, No. 106,923; Myrtle Camp, Milwaukee, 48.49 tons gross, 46.07 net, No. 92,416.

Grain at Chicago and Duluth.

Stocks of grain at Chicago and Duluth on Monday, May 2, were as follows:

	Chicago.		Duluth.
	Wheat, bu.	Corn, bu.	All wheat, bu.
In store.....	7,947,339	1,815,642	12,954,597
Decrease last week.....	11,315	.....	2,148,589
Increase last week.....	.....	12,250	.....
Excess over same time last year.....	2,521,931	620,148	7,889,433

In addition to the above there is 757,229 bushels of oats, 365,558 bushels of rye and 17,801 bushels of barley in store in Chicago.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 75 00
Champion Iron Company.....	25 00	.....	62 50
Chandler Iron Company.....	25 00	.....	45 00
Jackson Iron Company.....	25 00	.....	100 00
Lake Superior Iron Company.....	25 00	44 00	47 00
Minnesota Iron Company.....	100 00	.....	77 00
Pittsburg Lake Angeline Iron Co.....	25 00	.....	155 00
Republic Iron Company.....	25 00	.....	21 00
Ashland.....	25 00	.....	46 00
Section Thirty-three.....	25 00	.....	6 00
Brotherton.....	25 00	.....	2 50
Iron Belt.....	25 00	2 15	.....

The following is from Port Arthur: The Gunflint Lake Iron Company will be incorporated immediately by John Paulson, O. D. Kinney and Marcus Johnson. The capital stock will be \$100,000. This company owns property located about 2 miles from the boundary line and 21 miles from the present terminus of the Port Arthur, Duluth & Western Railway, which line will be extended across the border this summer. There is a fine out-cropping of magnetic ore, and developments will be pushed at once. Mr. Paulson is an experienced Minneapolis mining man and has been all over the Gunflint country.

Ex-Governor Campbell, Hon. W. V. Marquis, Allen W. Thurman and other Ohio people are still organizing new companies on the Mesaba. The Licking Mining Company is one of the latest. Winston Bros. of Minneapolis are the contractors who will build the 16 miles of road connecting the Duluth & Iron Range Railway with the Mesaba. The cost is \$134,000.

At the Hollister mine, Marquette range, the pumps have been taken out and all work suspended. This mine has shipped only three or four cargoes of ore during the past two years.

The annual meeting of the East New York Iron Company will be held at the office of the secretary in Ishpeming, Mich., on the 11th inst.

With 780 men still at work there is little in and around the Chapin mine to indicate a suspension of operations.

Lake Freight Matters.

A heavy movement of corn out of Chicago and the efforts of Duluth wheat shippers to forward a portion of the stocks in store there have resulted in a general lake freight market much stronger than had been expected at any time since the opening of navigation. With Duluth taking tonnage to arrive at 3½ cents for wheat to Buffalo and the Chicago market holding to 2 cents on corn and 2¼ cents on wheat, under a large supply of tonnage, there has been, of course, little chartering in iron ore. The Escanaba rate advanced to 75 cents, and shippers have been wanting tonnage from all ports, but they are hoping that the rise in grain is only temporary. Wild vessels from Ashland could not be had at this time below \$1.25, but shippers are not disposed to compete with the grain in paying such figures. Additional sales of ore at prices covering the lake freight must be made before shippers can bid against the grain to any great extent. In all quarters the importance of low water is admitted, however, and it is agreed that a reduction of full 15 per cent. in all Lake Superior cargoes will about counteract the influence of new tonnage on the freight market.

Although Buffalo coal dealers are not disposed to heavy shipments, all boats wanting cargoes at the low freight rates have managed to secure them. The same has been the case at Ohio ports, and now when soft coal shippers have liberal supplies of coal and are anxious to move it they find only one vessel to four or five cargoes. The rates, which are based on 40 cents to the head of Lake Superior and 50 cents to Duluth, have not advanced, but the tendency is in that direction. Some Cleveland vessel men have been considering the question of an agreement between a dozen or more of the large owners to refuse to carry any coal for two months or more to come. Such

an agreement would certainly be felt, but it must be considered, of course, that an increase in the number of vessels running light would tend to depress grain and ore freights. The complaint of the vessel owners is against coal for the reason that, although it has always been carried for nothing, the shippers of the bituminous article are endeavoring this season to hold lake freights down by fixing maximum rates from time to time during the season and agreeing to pay no more than these set figures.

Bridges at the Head of Lake Superior.

That certain railway and other interests at the head of Lake Superior are determined on several bridge schemes within the harbor of Duluth and Superior that will cause the lake shipping interests considerable annoyance for some time to come, there is now little doubt, as the refusal of the war department to approve of the plans for a bridge over the canal entrance to this important harbor has simply acted as an incentive to renewed efforts on the part of the bridge supporters. It will be another case similar to the Detroit river bridge question, and in dealing with the present agitation at Duluth the vessel owners may feel satisfied that their efforts will be directed with equal force against the aim of corporations in Chicago and other places to overcome the clause in the last river and harbor bill placing government control over navigable streams in all parts of the country.

In 1880 about 200,000 tons of freight was handled at all ports at the head of Lake Superior. In 1891 there was handled in the inner harbor, embracing Duluth and Superior docks, about 4,000,000 tons of freight. With the recent discovery of great deposits of iron ore and from the great development of the northwest and improvements in the St. Mary's river, it is fair to expect that within five years this freight movement will be increased to 10,000,000 tons. Ten years hence this harbor will rank among the greatest freight distributing points in the world. Is it not just then that the shipping interests should demand that in every case of a bridge charter of any character granted by the local authority a commission of engineers should pass upon the question of its relation to the important water traffic. Other projects will soon follow the canal bridge scheme. One of them is for a bridge from the Wisconsin side to Minnesota point and the other from Rice's point on the Minnesota side to Minnesota point. Representatives of strong local interests in Duluth are at work at Washington, and the matter of bridge schemes generally at the head of Lake Superior will bear watching. Not only should new projects be frustrated, but there are already one or two bridges at the head of the lakes that should be removed or altered in form.

Obstructions in St. Mary's River.

A communication from Harvey's marine bureau at Sault Ste. Marie, says:

While it is well known that a vessel which gets through the canal and lock has, as a rule, no difficulty in getting through the St. Mary's river, at the same time captains are complaining of striking the boulders which are known to be strewn along the bottom from the "Black Hole" to the east end of what is known as Rosse's dock. There is a channel this distance some 300 feet wide, but vessels are never safe running it in the condition it is in at present. It would be a very easy matter and not an expensive undertaking for the government to sweep this portion of the channel, which would save captains considerable anxiety and annoyance. There is another point in the St. Mary's river that requires attention. It is nearly abreast of Topsail island, where the Colgate Hoyt and another of McDougall's whalebacks in tow of the tug Balize went aground last season, and where the steamer Republic struck so disastrously this season. If these boulders were removed it would save many an accident. The work could be done with a scow, a diver and a hoisting machine in a very short time.

Nine New Lake Carriers.

The first supplement to the Inland Lloyds' Register for 1892, date of May 1, contains the names of nine new vessels, eight of which are steam and one sail, and all are among the largest class of carriers on the lakes. These boats are given an insurance valuation \$1,330,000 and their net aggregate registered tonnage, custom house measurement, is 13,438. These figures will tend to show the extent of shipbuilding on the lakes during the past winter. The number of vessels still on the stocks to go into commission within the next month or six weeks is even larger than the fleet shown here. The new vessels contained in this first supplement, with their tonnage, class, value, name of managing owners and port of hail, are as follows:

Name of vessel.	Class	Net tonnage.	Value.	Owner and port of hail.
Andaste	A1	1,256	\$150,000	Lake Superior Iron Co., Cleveland, O.
Colgate, J. B.	A1	1,372	150,000	American Steel Barge Co., Buffalo, N. Y.
Mather, Samuel.....	A1	1,372	150,000	American Steel Barge Co., Buffalo, N. Y.
Mariposa	A1	b-1,950	225,000	Minnesota St'mship Co., Cleveland, O.
Mitchell, Samuel.....	A1	1,800	190,000	William Chisholm, Cleveland, O.
Pioneer	A1	b-1,200	115,000	Cleveland-Cliffs Iron Co., Cleveland, O.
a-Uganda	A1*	1,709	130,000	James McBrier, Erie, Pa.
Wilson, Thomas.....	A1	1,372	150,000	American Steel Barge Co., Buffalo, N. Y.
a-Fitzpatrick, J. C.....	A1*	1,207	70,000	J. C. Fitzpatrick, Cleveland, O.
Totals		13,438	\$1,330,000	

a—Wooden vessels; all others steam. b—Estimated.

The consort John C. Fitzpatrick, to tow with the George T. Hope, is the only sail vessel in the above list. The Andaste is of the monitor type and the J. B. Colgate, Samuel Mitchell and Thomas Wilson are whalebacks. These has been some comment about reduced values on new boats going into the register, but it is very probable that in all cases values noted above are about equal to cost.

Naval Appropriations—Other Washington Matters.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., May 5.—For several years the officers of the naval engineers corps have been struggling to secure the enactment of legislation that will in a measure place them upon terms of equality with other naval officers. The Senate committee on naval affairs has reported bills looking to the accomplishment of this object, but for some reason they have encountered the opposition of the line officers of the navy and have failed of enactment into law. The struggle has been renewed in the present Congress, and the engineers have secured a favorable report from the Senate committee on naval affairs on a bill to increase the efficiency of the corps through the bestowal upon them of absolute rank instead of relative rank as at present. The line officers have returned the attack, and a few days ago Commodore Ramsey and Commander Davis addressed the House committee on naval affairs, before which the bill is pending, in opposition to it. The point of their objection was that there was no necessity for the legislation. But Commodore Melville, the chief of the bureau of steam engineering, and Passed Assistant Engineer Bennett took the opposite position and made arguments to show that conditions of the service have changed within the last few years, owing to the enormous extended use of machinery aboard modern war vessels, so as to greatly increase the importance of the engineers' department and enlarge the responsibility of the officers. Commodore Melville also dwelt upon the mutual benefit that would accrue to the navy and to the great technical schools of the country through the operation of that feature of the bill which permits the appointment of graduates of these institutions to places as cadets in the engineer corps.

The naval appropriation bill was reported to the Senate a few days ago by the committee on appropriations, and contained some news items of national interest not included in the bill as it passed the House. The most important amendment provides for the construction of a number of new vessels in addition to the two authorized by the House. These are: One seagoing coast-line battle-ship, designed to carry the heaviest armor and most powerful ordnance, with a displacement of about 9,000 tons, to have the highest practicable speed for vessels of its class, and to cost, exclusive of armament and premiums for increased speed, \$4,000,000; one harbor defense double-turreted ship of the monitor type, with 7,500 tons displacement, to have the highest possible speed of its class, and to cost, exclusive of armament and premiums, \$3,000,000; four light draught gun boats from 800 to 1,200 tons displacement, to cost \$450,000 each, and six torpedo boats to cost \$110,000 each. Not more than two of the torpedo boats are to be built at the same establishment. The

provisions of the naval bill of 1886 giving the secretary of the treasury discretion in building vessels are made applicable to the construction of vessels authorized. The committee inserted a proviso that for experiments, making tests, and development of torpedoes, projectiles, sub-marine guns and other instruments of sub-marine warfare and American armor, and for the use of nickle as armor the secretary is authorized to use \$150,000 of the appropriation of \$1,000,000, authorized by the last Congress for the purchase of nickle ore and nickle matter.

The committee also added to the bill an amendment providing that hereafter orders of the secretary of the navy employing officers on shore duty shall state that such employment is required by the public interests, but he need not state the duration of the service. The bill as reported from the Senate committee carries \$24,223,773, or \$2,960,866 less than the estimate, and \$8,317,881 less than the appropriation for the current fiscal year made by the last Congress. The amount on account of new vessels in the current law is \$17,607,000. The bill reported carries for new vessels \$10,142,000, a reduction on account of new vessels of \$7,465,000.

A civil service examination will be held on May 18 in Washington, and if necessary in other large cities, to secure eligibles for the position of computer in the nautical almanac office, where two vacancies exist, one at \$1,000 and the other at \$1,400. The examination will include the subjects of algebra, geometry, trigonometry and astronomy.

The census bureau has just issued a bulletin presenting statistics relating to the insurance business in several states of the Union, one of which is Wisconsin. These statistics show that in that state in the year 1889, the last year considered by the census, there were eight companies handling the insurance business relating to inland navigation and transportation. Risks to the number of 1,212,585 were written and renewed; \$7,832 in premiums and assessments were received in cash, and losses were paid in cash to the amount of \$5,533. The average amount of premiums received for each \$100 of risks written was .4563, and the average amount of losses paid to each one dollar of premium received was .7065.

The House committee on railways and canals has authorized a favorable report to be made on Representative Dalzell's bill appropriating \$40,000 to pay the expense of a survey of a route for a ship canal to connect the waters of Lake Erie, from a point at or near Erie, Pa., with the Ohio river at or near Pittsburgh.

Canadian Harbor Notes.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., May 5.—The steamer Cibola went into the new dry dock on Monday, the 2nd. She is the first large steamer that the dock has received. James Wilson who acted as clerk of works during the construction of the dock, has been appointed dock master.

The river canals have been opened and the twenty-five grain laden barges that were lying here awaiting the opening have passed on to Montreal. Notwithstanding that considerable grain has been coming along since navigation opened, there have been no detentions to speak of. The charters so far will utilize all the available bottoms for transportation, hence the preparations for river work is on a greater scale than ever before. It is expected that this season will be the busiest in the history of this city.

The Hon. John Haggart, minister of canals, is threatened with blindness. He is now confined to a dark room.

On Wednesday last the new steamer Columbia, building at Chester, Pa., for the Richlieu and Ontario Navigation Company, was launched. Several of the directors went from here to see the launch. Capt. G. Batten will command her.

The new propeller being built at Hamilton for Capt. Fairgrave will be called the Arabian. She will be launched on June 1 and will be commanded by Capt. Chestnut.

Fifteen spar and platform buoys are being laid in the harbor. They will mark off the shoals very distinctly.

Already two large rafts of timber have been forwarded to Quebec en route for England. All possible haste will be used in carrying lumber this season so that the boats can secure a portion of the fall grain trade.

The New York, U. S. N., the new twenty-knot cruiser has 16,500 horse power in a hull of 8,155 tons displacement. The Pirate, U. S. N., so-called at present, the new triple screw cruiser, has 21,000 horse power in a hull with 7,470 tons displacement, and is to make (it is hoped) 21 knots. This is to say that calculations show that in order to get one more knot per hour, 4,500 horse power are required on a vessel which has 685 tons less displacement than the twenty-knot vessel. In view of these facts the statement that some slight alterations in the machinery of the City of Paris have increased her speed nearly a knot an hour must be taken with some allowance.—New York Engineer.

The editor of the MARINE REVIEW has examined Patterson's Nautical Dictionary thoroughly, and with pleasure recommends it to any one having any connection with marine affairs.

Buffalo Elevator System.

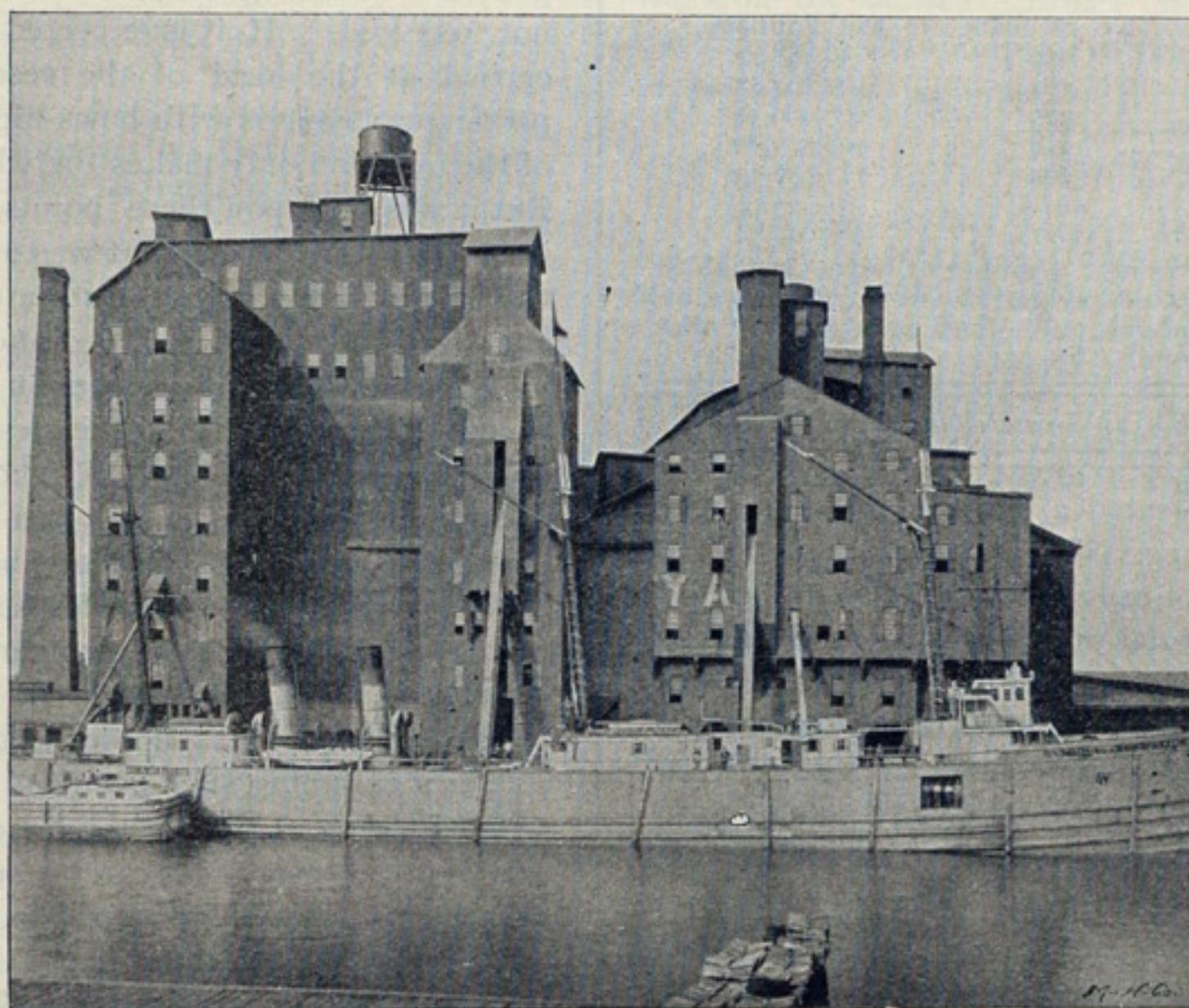
The illustration on this page represents a scene in Buffalo harbor, showing a Western line boat being relieved of a cargo of grain. The Erie canal boat alongside is taking on a portion of the cargo from the elevator. There was handled last year by Buffalo elevators 135,315,510 bushels of grain and flaxseed, 130,253,138 bushels being cared for by elevators belonging to the Western Elevator Company, which controls almost the entire elevator system. This shows an increase of nearly 40,000,000 bushels over the amount handled in any previous year. All this grain and flaxseed was received by lake. Of the total receipts, 75,597,079 bushels were weighed by the Merchants' Exchange weighmaster, who found the shortage per 1,000 bushels as follows: Chicago .166, Milwaukee .614, Toledo .346, Duluth and West Superior .335, Port Huron .34, Fort Howard 1.483, Gladstone .2, Washburn .78; Detroit overran .283 and Fort William cargoes were .314 ahead. The total shortage at Buffalo for 1891 was 38,460 bushels and there were 20,388 bushels over. Considering the amount of grain received the shortage equaled that of other years, the average shortage for the past twelve years being reduced 80 per cent.

About 20 per cent. should be deducted from this capacity for storage of remnants, working room and elevators out of repair. The estimated cost of the elevators, transfers and floaters is over \$8,000,000. The transfer capacity for each twenty-four hours would probably aggregate 4,000,000 bushels—that is to say, there are facilities for receiving from lake vessels and railroads and transporting to canal boats and cars daily, the quantity named for the forty-six elevators, transfers and floaters.

The engraving is from a photo by Bliss Brothers, commercial photographers, Buffalo.

Grain Rates, Chicago to New York.

Last week's REVIEW contained a table showing annual average freight rates per bushel of wheat for transportation from Chicago to New York for each year from 1868 to 1885 inclusive. Below will be found the figures from 1885 to the present time. They were secured from a government publication entitled "Statistical Abstract of the United States," the fourteenth number of which has just been issued. It is prepared by the bureau of statistics, treasury department, and contains a vast amount of statistics on finance, coinage, commerce, im-



The cost of elevating, receiving, weighing and discharging under the rules governing the business in Buffalo is five-eighths of one cent a bushel. Elevating charges are paid by the consignee, the vessel paying only for the shoveling, and no grain is received for transfer.

The following statement shows the names and storage capacity of the several elevators:

Name.	Capacity, bushels.	Name.	Capacity, bushels.
Bennett.....	800,000	N. Y. L. E. & Western	720,000
Brown.....	250,000	Niagara A.....	800,000
City A.....	600,000	Niagara B.....	1,200,000
City B.....	800,000	Niagara C.....	200,000
C. J. Wells.....	550,000	Queen City, A, B and C	450,000
Coatsworth.....	1,200,000	Richmond.....	250,000
Connecting Terminal...	950,000	Schreck.....	50,000
Dakota.....	850,000	Sternberg, (unused)....	
Erie Basin, (unused)...		Sturges.....	300,000
Evans.....	400,000	Swiftsure, (unused)....	
Exchange.....	500,000	Ontario.....	450,000
Frontier.....	650,000	Union, (unused).....	
International, (Black		Watson.....	600,000
Rock).....	650,000	Wheeler.....	350,000
Flax Seed.....	65,000	Wilkeson.....	400,000
Lake Shore.....	300,000	William Wells, (unused)	
Lyon.....	100,000		
Marine.....	125,000		
National & Globe Mills	100,000		
		Total, 34 elevators:...	14,660,000

migration, shipping, population, railroads, etc. The data regarding the grain freight rates was prepared by J. C. Brown, statistician of the New York chamber of commerce and covers a period of thirty-five years from 1857 to 1891 inclusive. Following are figures completing the table that appeared last week:

CALENDAR YEAR.	AVERAGE RATES PER BUSHEL.		
	By lake and canal.	By lake and rail.	By all rail.
1886.....	8.71	12.00	16.50
1887.....	8.51	12.00	15.74
1888.....	5.93	11.00	14.50
1889.....	6.89	8.70	15.00
1890.....	5.85	8.50	14.31
1891.....	5.96	8.53	15.00

b Average of officially published tariffs.

All work on the \$450,000 light-house, which Capt. John F. Anderson of Whitestone L. I., contracted to build for the government on Outer Diamond Shoal, off Cape Hatteras, has been abandoned, and there is no prospect of a light-house being built on that shoal under the stipulations of the present agreement.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, } PROPRIETORS.
F. M. BARTON, }
HOMER J. CARR, Associate Editor and Manager Chicago Office,
210 South Water Street.

Published every Thursday at No. 516 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—\$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels.....	1,243	325,131.06
Canal boats.....	703	72,515.42
Barges.....	62	20,472.37
Total.....	3,600	1,154,870.38

Tonnage built on the lakes during the past five years, according to the report of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45
Total.....	1,021	485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

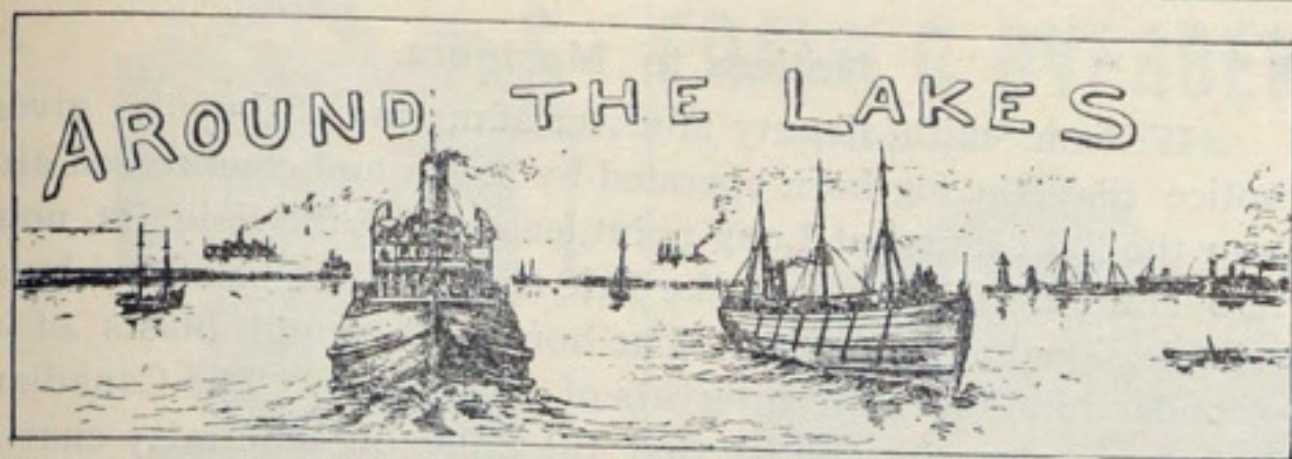
Entered at Cleveland Post Office as Second-class Mail Matter.

In last week's issue was printed a lengthy communication from James A. Dumont, supervising inspector general of steam vessels, on the subject of central range lights and names on bows of steamers. An editorial in a previous issue of the REVIEW criticised, somewhat severely, the methods of the steamboat inspection service and other branches of the treasury department in the interpretation and enforcement of laws governing the merchant marine. The last Congress passed a law requiring, as it was supposed, names on bows of all documented vessels of the United States, steam and sail. With the approach of the time for this law to go into effect, the treasury department began sending out circular letters interpreting the law, and among subordinate officers who received these letters were some of the supervising and local inspectors around the lakes, as well as the collectors of customs. In the variety of circulars a conflict was reached, some of them ruling that steam vessels as well as sail vessels and barges must have the names on bows. The result was a general uncertainty as to whether steamers would be required to comply with the law or not, and it was charged that the inspection service was in part at fault for the confusion. Gen. Dumont, in clearing his end of the department in the matter, would have it understood, through several circulars quoted in his letter, that the blame is with the bureau of navigation. He fails to quote one of the circulars, however, and a very important one on the subject, if his aim is to defend the entire department, that of Jan. 9, 1892, passing upon a case presented by the collector of customs at Port Townsend, Washington, in which it is held in direct contradiction to the ruling of April 16, 1891, circular No. 58, that the act of February, 1891, calls for the marking of the names of "every documented vessel, steam or sail," upon each bow and upon the stern. The aim of criticism on this subject was to show that complicated methods and a shifting of responsibility in the different branches of the treasury department is a continual source of annoyance to the shipping interests. If Gen. Dumont can quote all circulars is-

sued by the department on the subject of names on bows, is it not surprising that, notwithstanding the close relation which the inspection service bears to the question, he does not advance an opinion as to whether steam as well as sail vessels are expected to comply with the law? One of the circulars exempts steam vessels in very plain language but, notwithstanding this ruling, collectors of customs on the lakes have, under another interpretation of the law, advised masters of steam vessels to have the names placed on bows, and as a matter of fact few if any of these steamers are now without the names so marked. They want to avoid the danger of a fine. But Gen. Dumont says this is not his fault. It was not the intention to signal out his office for criticism. It was claimed that the department methods, with its numerous branches, were conflicting and annoying to the shipping interests, and this instance in the application of a law bears out this claim.

Now as to the matter of central range lights on steamers. An error was made in the editorial referred to in saying that the law required an after light 15 feet above the "mast head" light. The law does say that the after light shall be 15 feet above the light "at the head of the vessel," and according to the inspector-general where range lights are required the mast head light is not required. If it is expected that the forward light shall be carried at the head of the vessel, as in the case of side-wheel passenger steamers with bows high out of the water, this phase of the question only makes the whole matter more complicated. But it was not upon these points of difference that a general criticism of the department was made. The fact remains that this law has been upon the statute books for years without being lived up to or repealed and has been read time and again by vessel owners and masters on the lakes and regarded simply as one of the mysteries of the steamboat laws. Even the steamboat inspectors themselves, who are familiar with practical navigation on the lakes, will admit with masters and owners that changes to new types of vessels have rendered some features of the laws regarding lights useless and annoying. This is one of them, and if a number of steamers are find this season on account of it the blame should rest largely with the department of the government that should know of the impracticability of properly enforcing such laws and should look after their repeal or adjustment. With some vessel masters feeling that they are safe because their boats carry a small bit of sail, others putting up a stick aft and a light on it to avoid the danger of a fine and still others doing nothing in the uncertainty as to whether they will be fined or not, there is certainly little consolation in the opinion of the inspector-general "that a vessel in collision without the lights required by law would be deemed by the courts *prima facie* in fault, and would be liable for damages arising from such collision." Exceptions will, of course, be taken to such an opinion, as it would be exceedingly difficult to prove under present conditions regarding this matter of range lights that a collision occurred on account of their absence on any boat. It might have been inferred from what was said previously on this subject that Supervising Inspector Westcott of Detroit was instigative of stirring up attention to this law on range lights, but such is not the case. Reference to the law at present was caused, it is understood, by Canadian authorities writing to Washington on the subject.

A Chicago dispatch says that the Lehigh, Lackawana, and Silver Creek and Morris coal companies have sold out their business, wharf property and plants in Chicago, Milwaukee, West Superior, St. Paul and other places to the Philadelphia & Reading Railroad Company. There is no official announcement on the subject but it is claimed that the Reading combination will through this deal control boats, wharfs and other effects of these companies. This would mean, of course, a monopoly of the hard coal trade.



Capt. Oliver Piland died at Two Rivers, Mich., Sunday. He had been keeper of the life saving station at that point for fifteen years and was fifty years of age.

Commissioner of Navigation E. C. O'Brien has granted the request of the Milwaukee Tug Boat Line to have the name of the tow barge Helena changed to Amboy.

Capt. Thomas Davidson is about to complete the work of relaying the inlet pipe to the Detroit waterworks. This is the third inlet pipe he has laid for the new waterworks, two of 5 feet 6 inches diameter and one of six feet.

Chicora is the name of the new screw steamer being built by the Detroit Dry Dock Company for the Graham & Morton Transportation Company. She takes her place on the Chicago and Benton Harbor route June 1. Capt. Edward Stine will command her.

At Capt. James Davidson's yard, West Bay City, there are now six wooden vessels on the stocks. Three of them are steamers larger than the "Big Four," two are consorts and there is one harbor tug. All are building for the Davidson Transportation Company. The steamers will be launched shortly.

The W. L. Scott Company, coal miners and heavy lake shippers, have incorporated with a capital stock of \$1,000,000, fully paid up. The officers are John S. Richards president, L. M. Little, secretary and John William Little, treasurer. The head offices are at Erie, Pa., with a branch house at Chicago.

The Chicago board of underwriters has adopted the following rates on grain cargoes, to go into effect at once: To ports on Lake Michigan, 30 cents; Lake Superior, 50 cents; Lake Huron, Sarnia and Detroit river, 35 cents; Georgian bay and Lake Erie, 40 cents; Lake Ontario, Ogdensburg and Montreal, 50 cents.

At the yard of the Detroit Boat Works last week the small steamer building for Doller and others of Put-in-Bay for passenger traffic among the Lake Erie island was launched. The boat is 95 feet long. Another trim craft, the steam yacht building for Mark Hopkins of St. Clair, Mich., will be launched from this yard next week.

Buffalo shipping interests fear a veto from Governor Flower of New York on the bill appropriating \$540,000 for canal improvements in the state. Rumor has it that the veto is intended for the purpose of keeping the rate of taxation under 2 mills. Resolutions from business men favoring the bill have been forwarded to the governor.

At James Davidson's ship yard, West Bay City, the keel was laid a few days ago for another schooner. The boat will be 211 feet keel, 35 feet beam and 15 feet depth of hold. She will be a duplicate of the schooner commenced at the yards two weeks ago and will be completed July, 1. The boat is constructed on builders' account.

The steel whaleback steamer Thomas Wilson was launched Saturday at the Superior yards of the American Steel Barge Company. The Wilson is the largest vessel ever completed by the company, though four others of the same size are on the stocks for an early launch. The Wilson is 320 feet long. She will load at Duluth next week for Buffalo.

Important to Masters in the Escanaba Trade.

When placing the Poverty island black and red spar buoy the other day, Commander Nicoll Ludlow, in charge of Lake Michigan light-house affairs, found a stone ledge extending from the "patch" where the buoy is located, south by east for three-quarters of a mile, with 23 feet of water at the south end and as little as 19 feet quite close to this end. The chart gives 7 and 8 fathoms. There is, no doubt, less than 19 feet on this ridge, and vessels should haul up around Poverty island for the black

spar buoy and not stand over to the north and west farther than is necessary. The light-house board will very probably take action with regard to this new discovery but in the meantime vessel masters should go carefully until after getting to the westward of the 17-foot shoal buoy, when, so far as is known, it is all clear to the Corona shoal on the way to Escanaba.

A Curious Disaster.

One of the most curious shipping disasters ever recorded is that which happened to the steamship Lindula near Calcutta. Nearly two years ago the steamship Regius was run into and sunk at her moorings in Garden Reach, River Hoogly. She was loaded with teas, seeds, and rice, and it would appear that as she rested at the bottom on her side the gases from her decomposing cargo ascended into her upper side and accumulated there. In January the Lindula struck the sunken wreck; immediately after the collision a hissing sound was heard from the fore-peak, and on one of the crew going with a light to see what was amiss, an explosion of gas occurred killing two men and injuring others so severely that seven of them died subsequently in the hospital. The gas or foul air which exploded was from the sunken steamer—liberated by the collision and escaping into the fore-peak of the Lindula through holes made in the bows by the impact of the two hulls.—Fairplay, London.

Trade Notes.

DeGrauw, Aymar & Co., 34 and 35 South street, New York, have recently taken additional room at 5 Coenties slip, to accommodate a rapidly increasing flag manufacturing business, one of the largest in the United States. The sewing is done by machines turned at the rate of 1,200 revolutions per minute, all machines being connected with a shaft. Even the stars for the flags are cut by dies. It is believed that this company can manufacture flags at less cost than any other concern in the country.

S. F. Hodge & Co., Riverside Iron Works of Detroit, have begun work on the engines for the car ferry building by the Craig Ship Building Company for service in the coal trade on Lake Michigan. The boat will have three engines, two aft and one forward.

Parties interested in yachting and in need of a 30-foot cabin sloop yacht, built in Brooklyn, N. Y., with iron keel and cast iron ballast, can learn of something to their advantage by addressing the MARINE REVIEW, 516 Perry-Payne building, Cleveland, O.

For a new catalogue of pumping engines, valuable as to contents and convenient in form, address Henry R. Worthington, New York. Other catalogues of engines will be issued soon.

Wrecks and Heavy Losses.

Through collision with the steamer Russia in a fog on Lake Erie Sunday night, the Canadian steamer Celtic was sunk 15 miles off Rondeau, the accident resulting in the first total loss of the season. The Russia was also badly injured. The Celtic was loaded with wheat. She was owned by the Mackay estate of Hamilton, was of 413 tons register and was valued at \$20,000.

The steamer Yosemite is also a total loss, or nearly so. She took fire and burned to the water's edge at Emerson Saturday. The Yosemite was owned by Estes and others of Sandusky, registered 229 tons and was valued at \$16,000.

The Providence & Stonington Steamship Company's new steel steamer New Hampshire on her recent trial trip at Wilmington, Del., where she was built by the Harlan and Hollingsworth Company, made a record of one mile in 2 minutes and 59 seconds or a little over 20 miles per hour. The New Hampshire is a sister-ship to the Maine, built by the same company. Both will engage in the Long island sound passenger trade. They are screw propellers with spacious cabins and numerous staterooms built up on guards extending over the sides of the hull. Interest attaches to their success in this trade, as they are intended to supercede the side-wheel steamers.

Send 50 cents in stamps for names of masters and engineers in over 100 of the largest fleets on the lakes.

In General.

In the new Inland Lloyds Register the steamer Ranney is rated A2*. This is evidently a printer's error, as there is no such rating.

The Keweenaw, another of the lake vessels in coast service, met with an accident on the Pacific coast a short time ago. She lost her rudder while on her way from Seattle to San Francisco with coal and was towed to the latter port. A large salvage claim will probably result from the accident.

As an outcome of the accident to the whaleback Wetmore while running light on the Pacific coast near San Francisco, it is announced that seagoing boats built hereafter by the barge company will be so constructed as to provide for more water ballast forward to bring down the spoon bow when running light.

Prof. W. F. Durand, late of the engineer corps, U. S. N., is principal of the school of marine engineering and naval architecture recently opened in connection with Sibley college, Cornell university, Ithaca, N. Y. Mr. G. R. McDermot, late with Messrs. J. & G. Thompson of Clydebank, has been appointed assistant professor of naval architecture.

On account of the increasing tendency on the part of underwriters at Lloyds, London, to take risks of all kinds, a large proportion of which are not connected with marine insurance, the officers of that institution have given notice that the deposits and guarantees lodged with them by underwriting members will be applicable only to the settlement of claims of a marine kind.

The Harlan & Hollingsworth Company of Wilmington, Del., who have applied for space at the World's Columbian Exposition for steamship models, paintings, etc., will probably increase the exhibit by the addition of a model of the company's dry dock, on which they are now making extensive alterations and improvements, such as will enable them to dock all classes of vessels up to 350 feet in length. The pumping plant connected with the dock is capable of emptying it in an hour and a half.

Several attempts have been made lately to purchase the steamboats and docks of the Detroit and Cleveland Steam Navigation Company with a view to floating a new company in England. An option was secured on a control of stock some time ago, but the English promoters of the scheme claimed that the bonded indebtedness of the company was against its being taken over by the intended purchasers. An attempt a short time ago to secure a renewal of the option was not considered by the steamboat company. The craze for sales to English syndicates is evidently on the wane.

Ten thousand railroad coal miners in the Pittsburgh bituminous coal district have renewed work at the scale of wages that prevailed last season. This is an announcement that carries considerable comfort to the shipping interests of Ohio and Pennsylvania on the lakes. The miners of Ohio and Pennsylvania have had some difficulties in settling wages with their employers, but it must be admitted that the plan of meeting in conference on this subject each year and the agreements that have been made by employers and employees might well be copied in other branches of the shipping trade.

Notices to Mariners.

William Smith, deputy minister of marine of Canada, gives notice that the fog horn operated by steam and compressed air, near the light house at Long point, east end Lake Erie, is now in operation. The entire Lake Erie trade will be benefited by a reliable signal at this point. The horn will sound blasts of 7 seconds duration with intervals of 30 seconds. The Canadian department also gives notice that the following admiralty charts of Georgian bay and the north channel of Lake Huron, made from surveys by Staff Commander J. G. Boulton, R. N., and issued by the department of marine, can be purchased from the chart agent, Charles Potter, 31 King Street East, Toronto. No. 906, entrance to Georgian bay, etc.; No. 907, Georgian bay to Clapperton island; No. 908, Clapperton island to Mildram bay; No. 909, Mildram bay to St. Joseph island; No. 910, Clapperton channel; No. 1507, St. Joseph channel; No. 1213, Collins inlet to McCoys island, N. E. coast of Georgian bay; No. 1214, Cobot Head to Cape Rich; No. 1408, Collinwood and approaches. A revised edition of the "Georgian Bay and North Channel Pilot," written in connection with the above charts, will shortly be issued by the marine department, from whom, as well as from the chart agent at Toronto, it can be obtained.

Soundings taken in the harbor of refuge at the Lake Michigan entrance of the Sturgeon bay canal, under the direction of Major James F. Gregory, corps of engineers, United States army, show that a shoal has formed about midway between the harbor entrance and the mouth of the canal, with a depth of but 12 feet of water over it. In entering the harbor the best water is near the north pier.

McDougall's English Patent Claims.

A report from Duluth says that Capt. Alex. McDougall will enter patent infringement suits against the John Doty Engine Company of Toronto if that company builds the new style of boat proposed for J. T. Marks and others of Port Arthur. It is also said that the American Steel Barge Company claims to find patent infringements in the "straightback" vessel to be built for Eddy Bros. of Saginaw by the Detroit Dry Dock Company. Shipbuilders of the lakes would undoubtedly be pleased to see a suit of this kind instituted, as it would settle some questions as to the right of the patents claimed by the barge company.

In England the specifications accompanying patents on the barges in that country have just been given out for publication. The deck of ellipsoidal form, spoon-shaped bow and wedge-shaped stern provided with a skeeg are claimed as special features in the patents. Copies of the specifications, which are numbered 3,531, can be secured for 1s. 2d. from H. Reader Lack, 38 Cursitor street, Chancery Lane, London, E. C.

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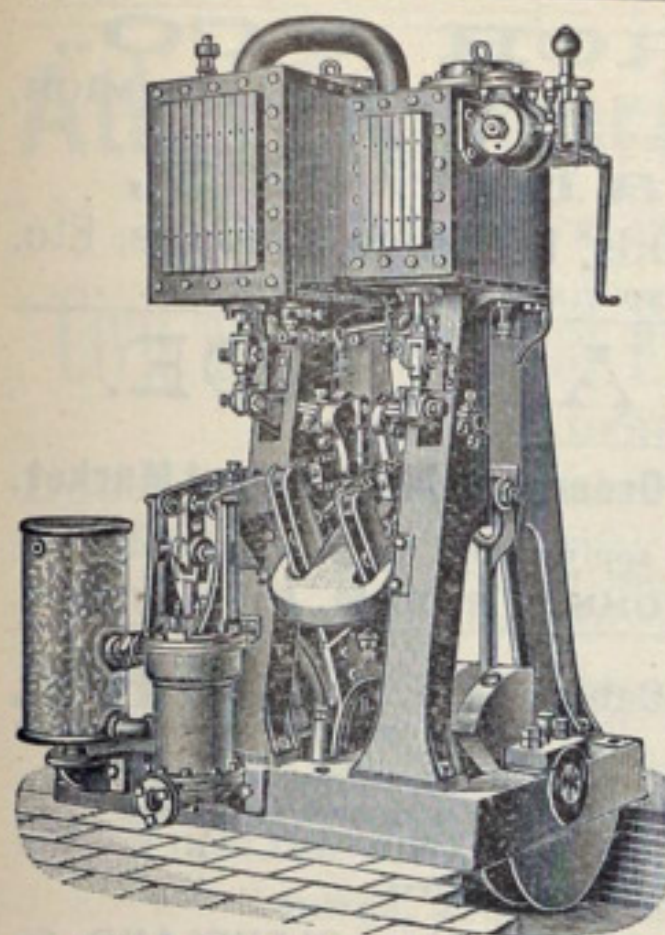
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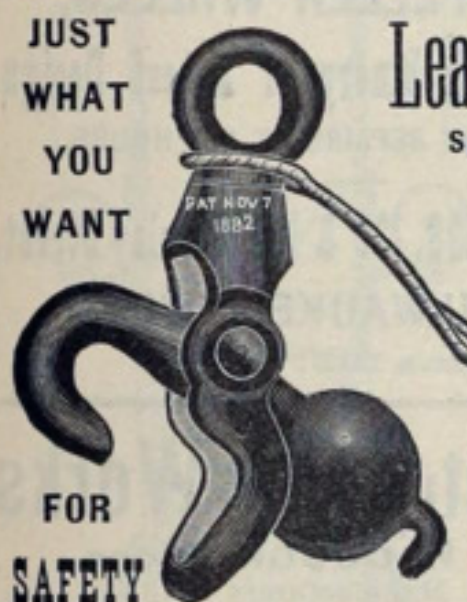
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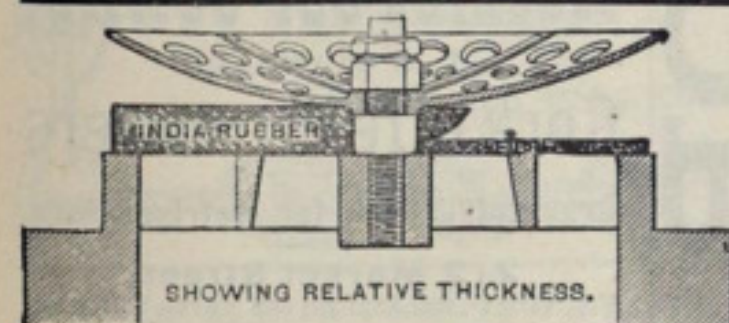
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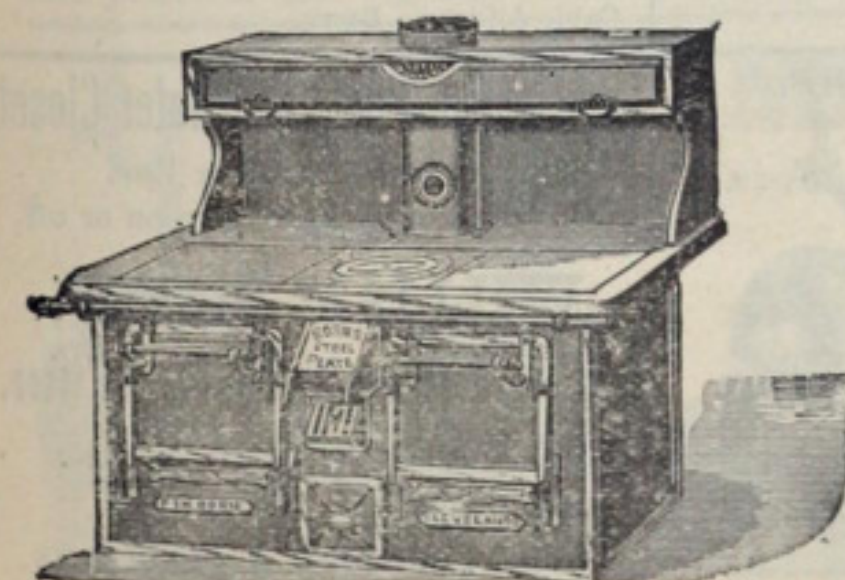
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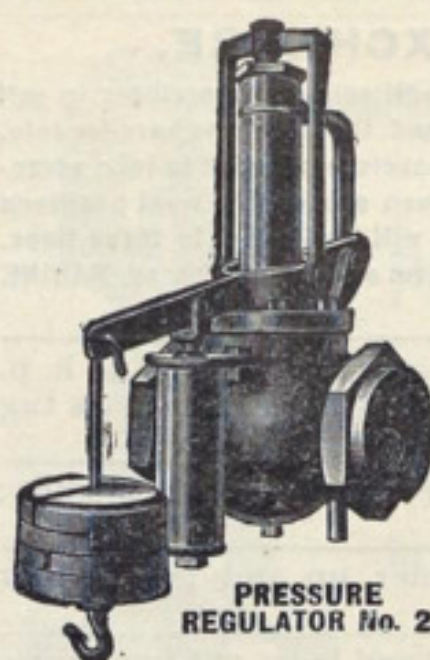
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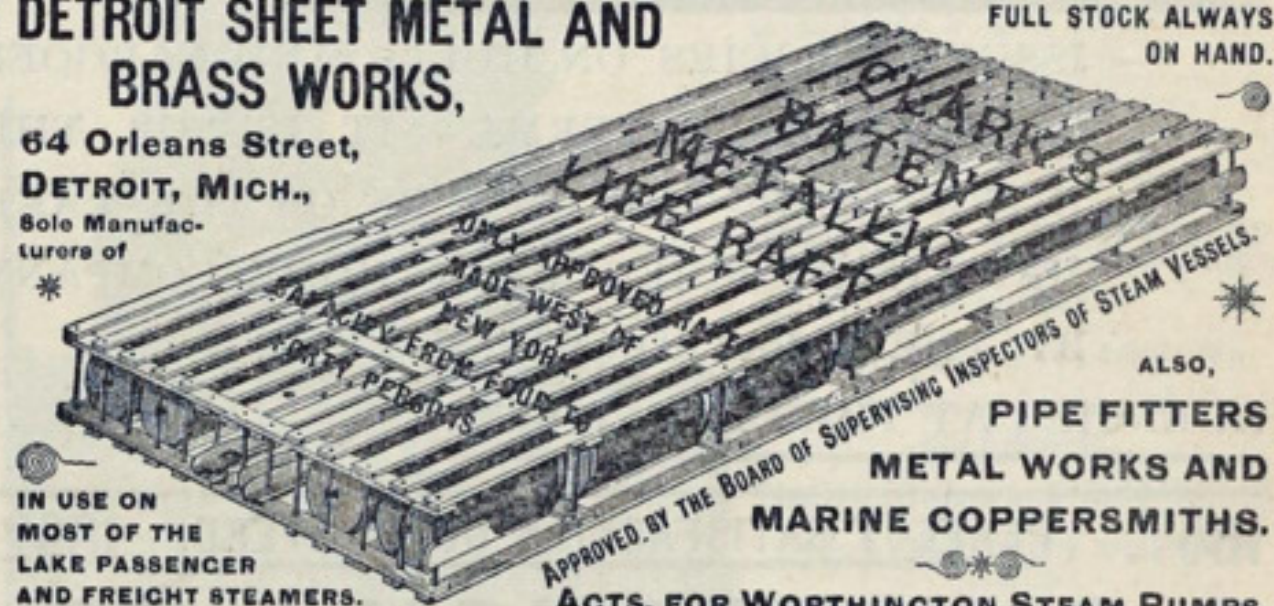
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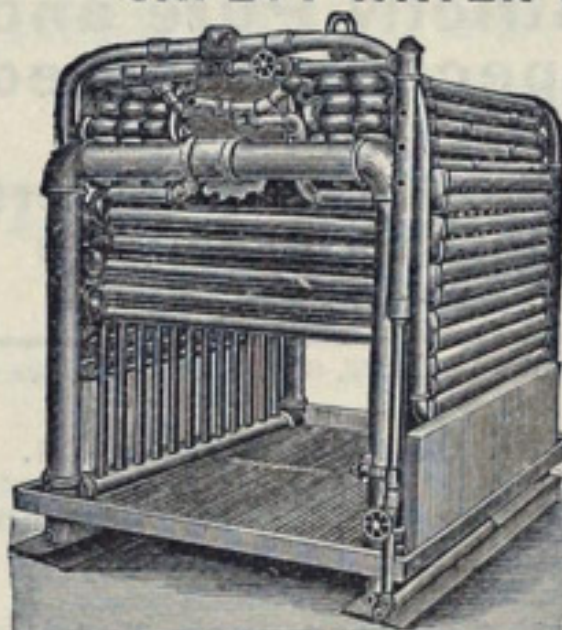
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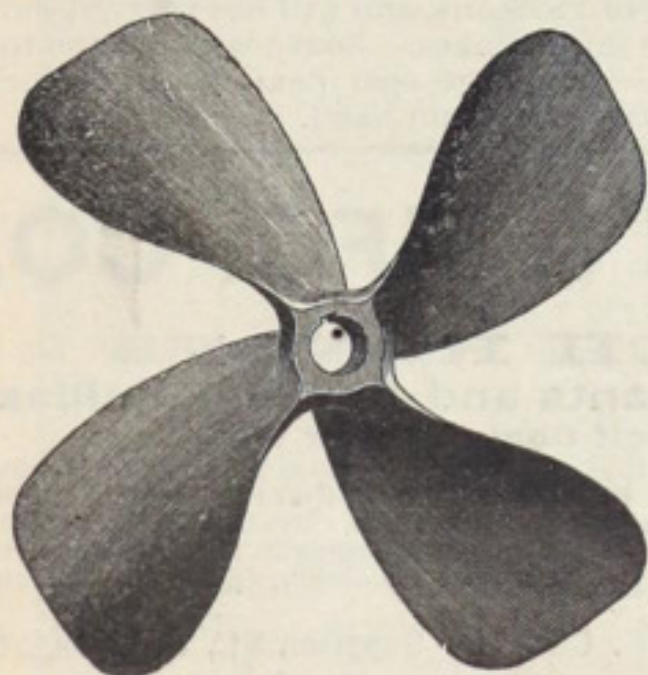
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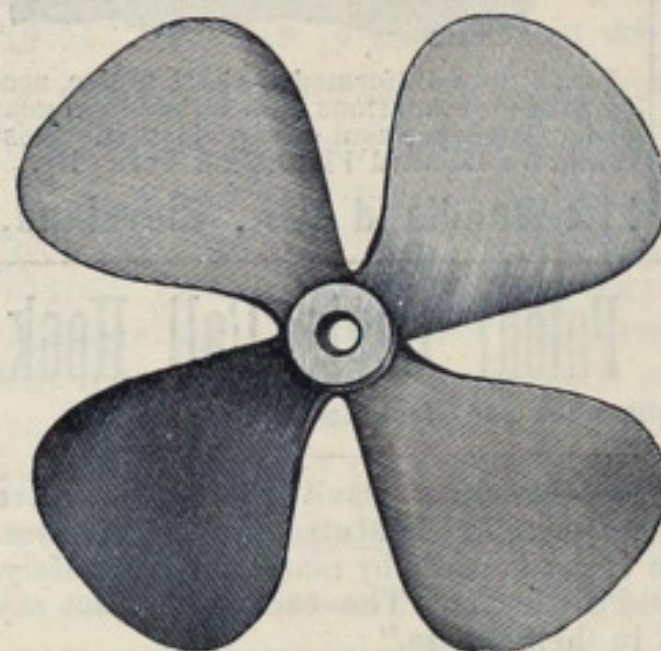
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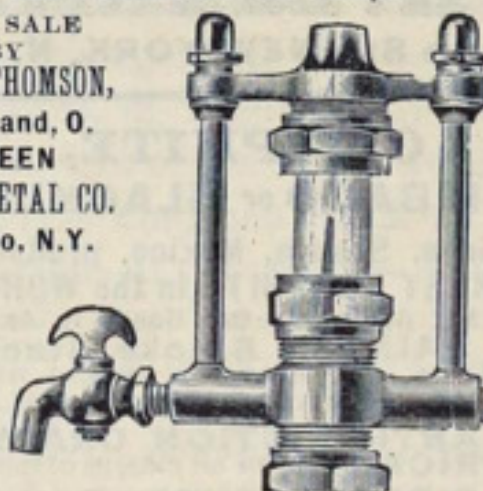


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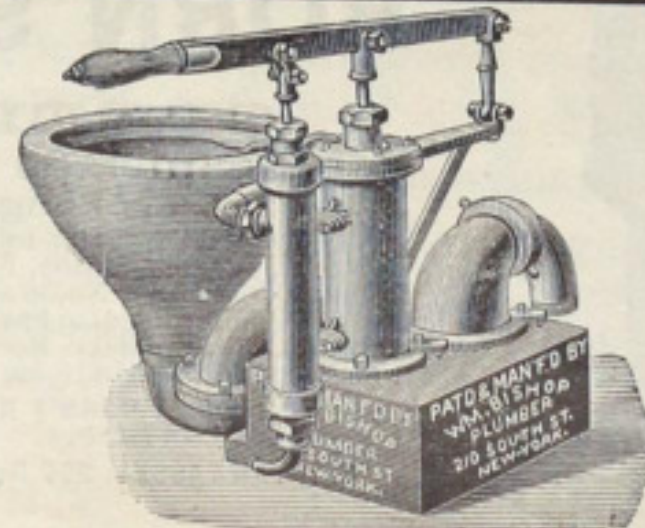
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
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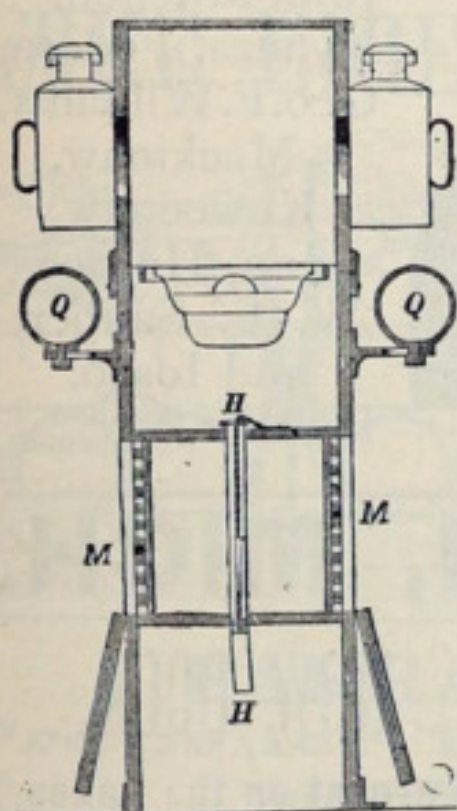
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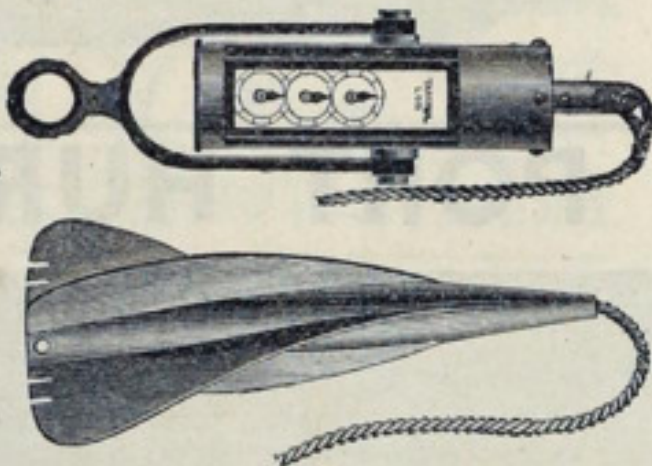
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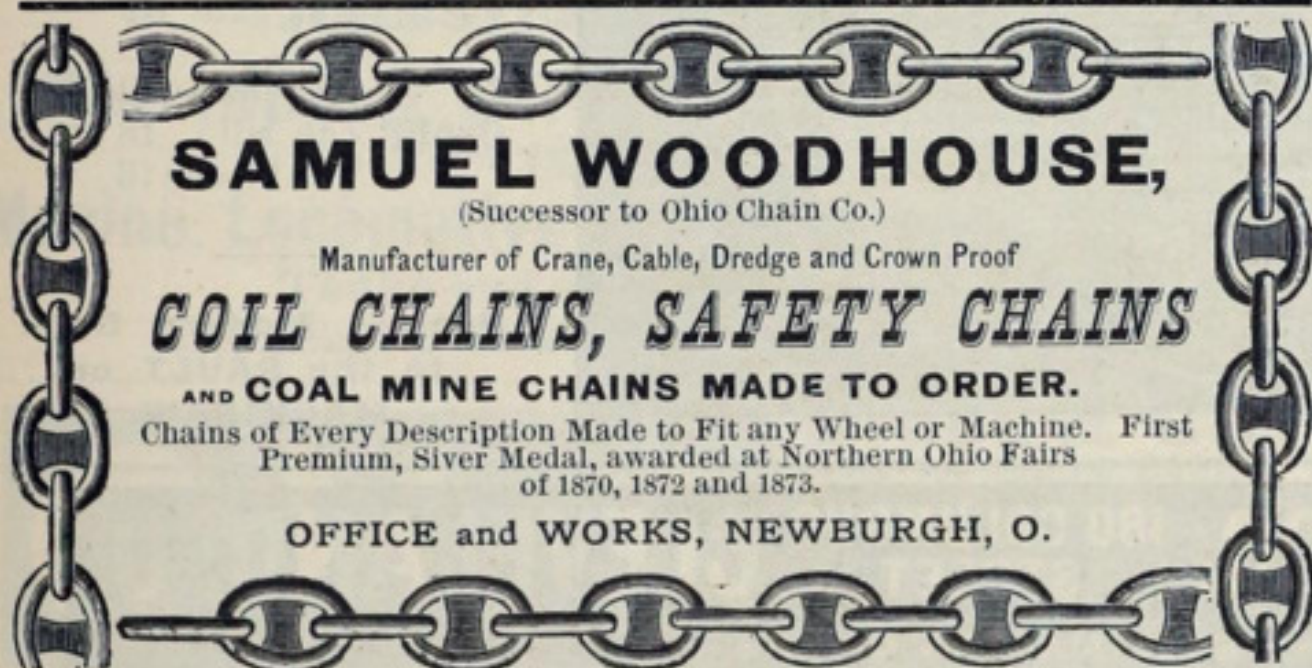
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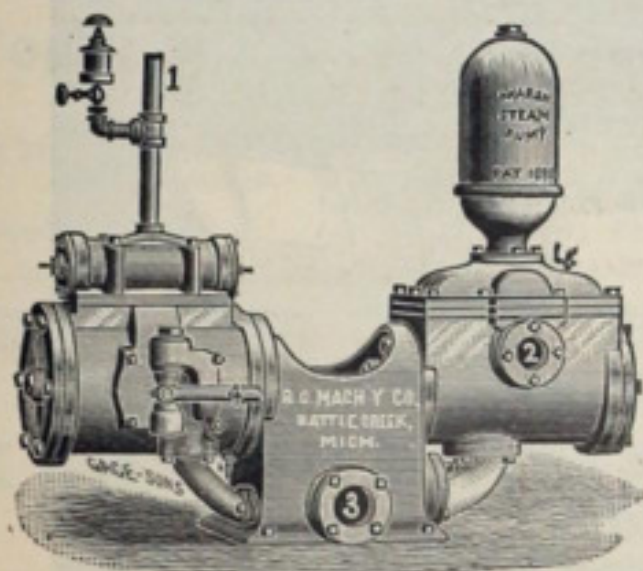
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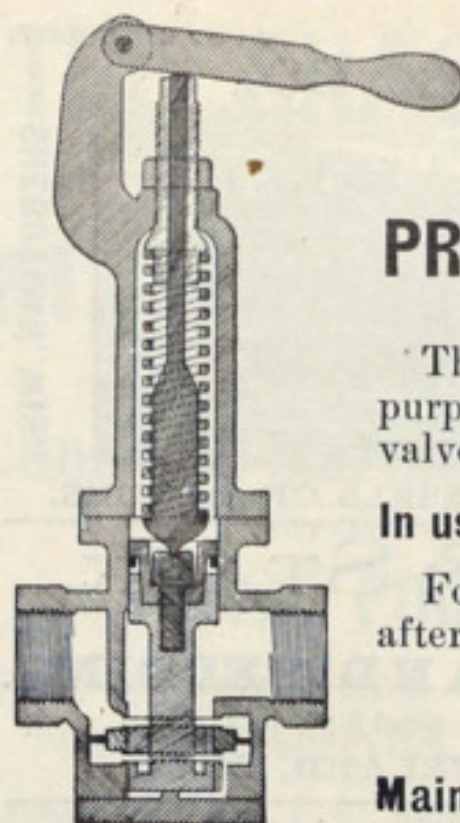
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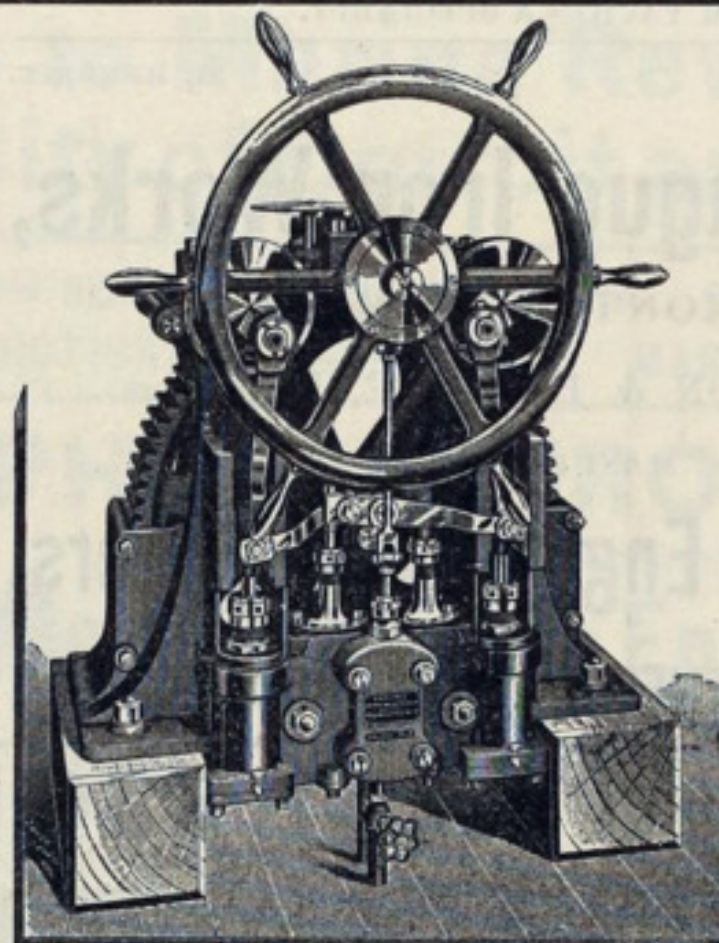
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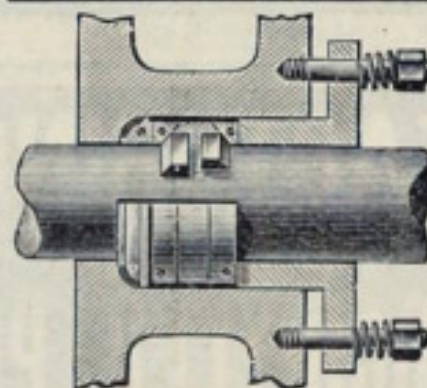
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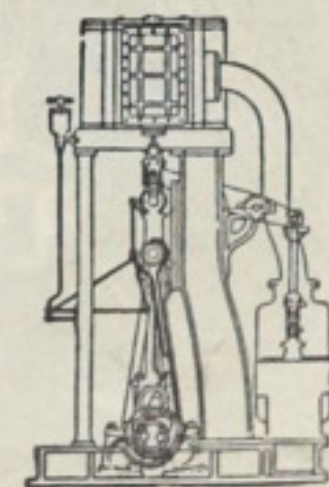


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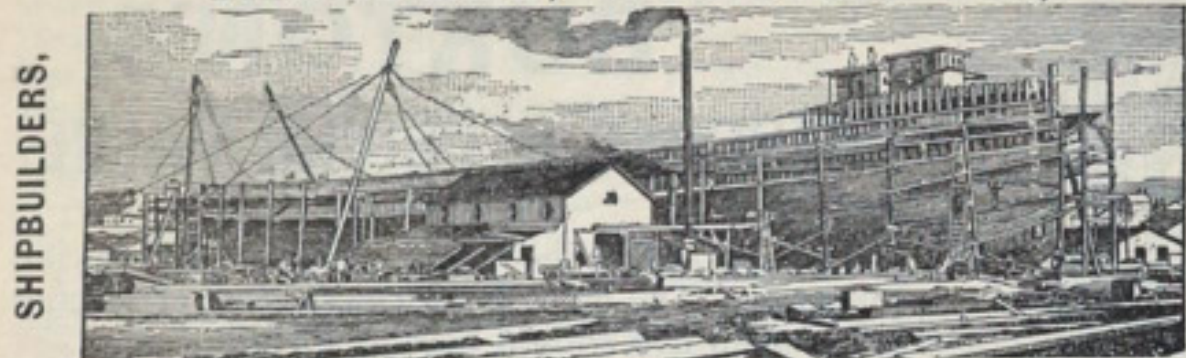
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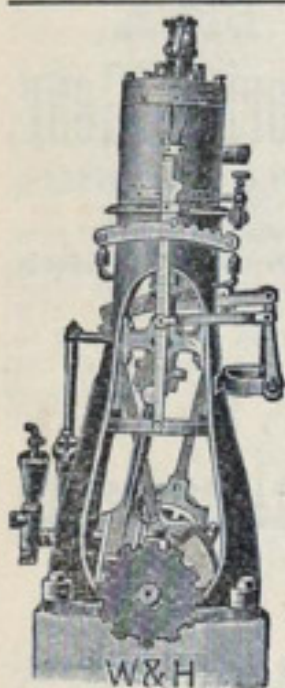
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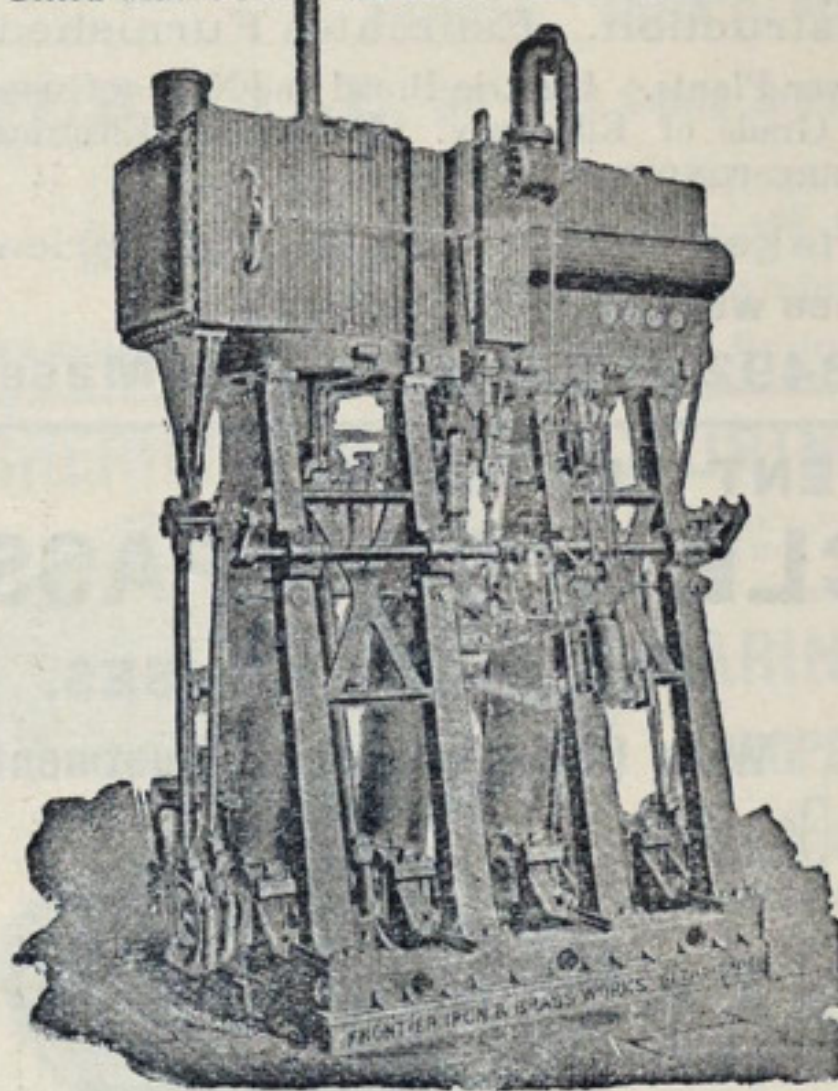
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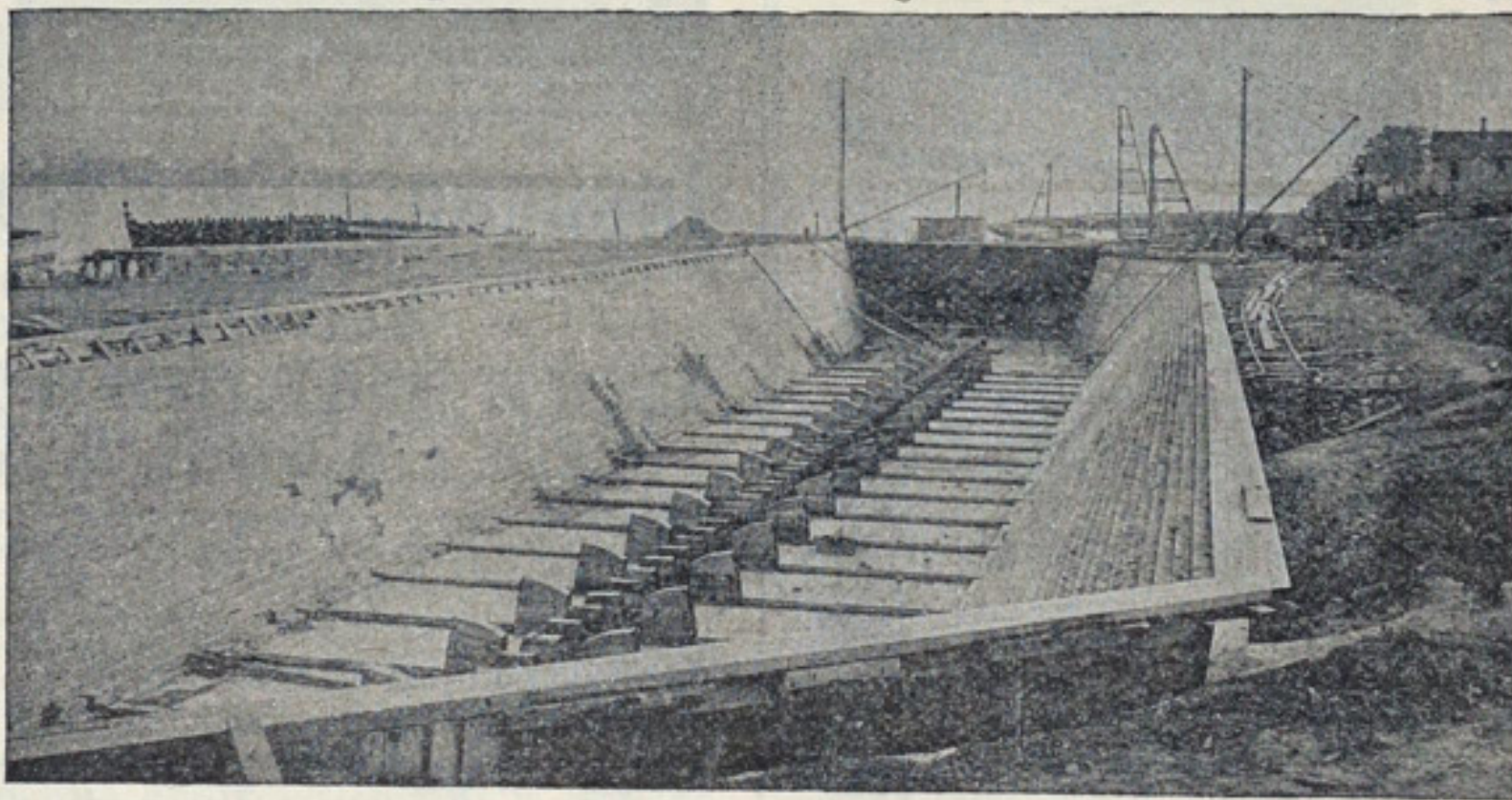
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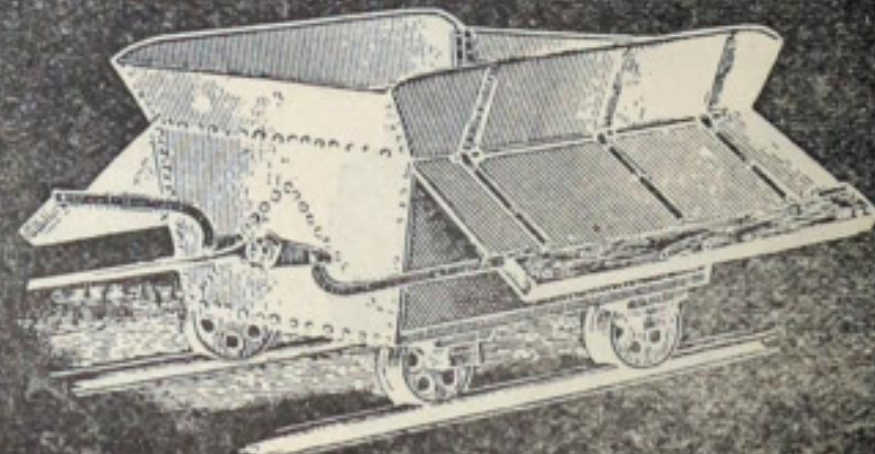
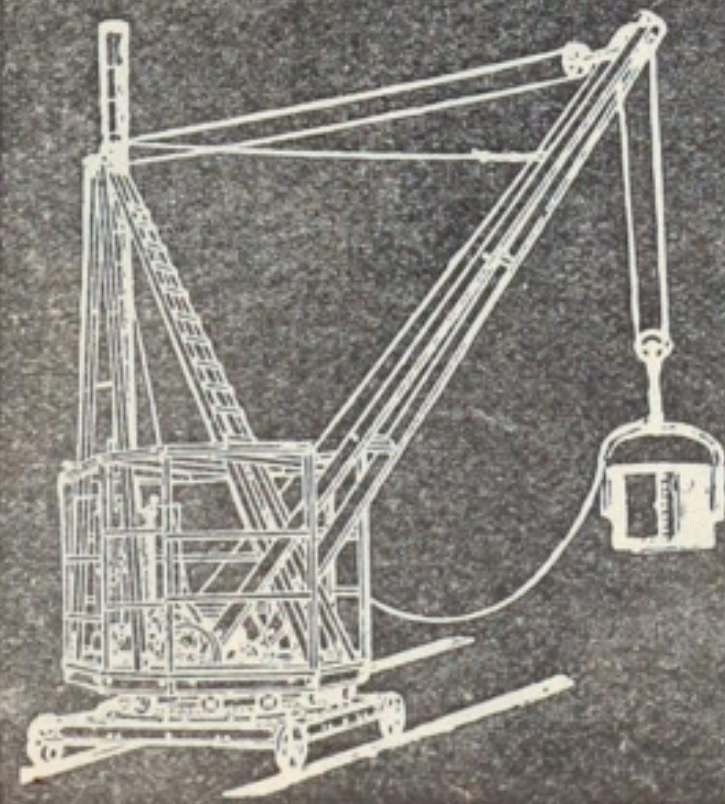
Length: 400 feet.

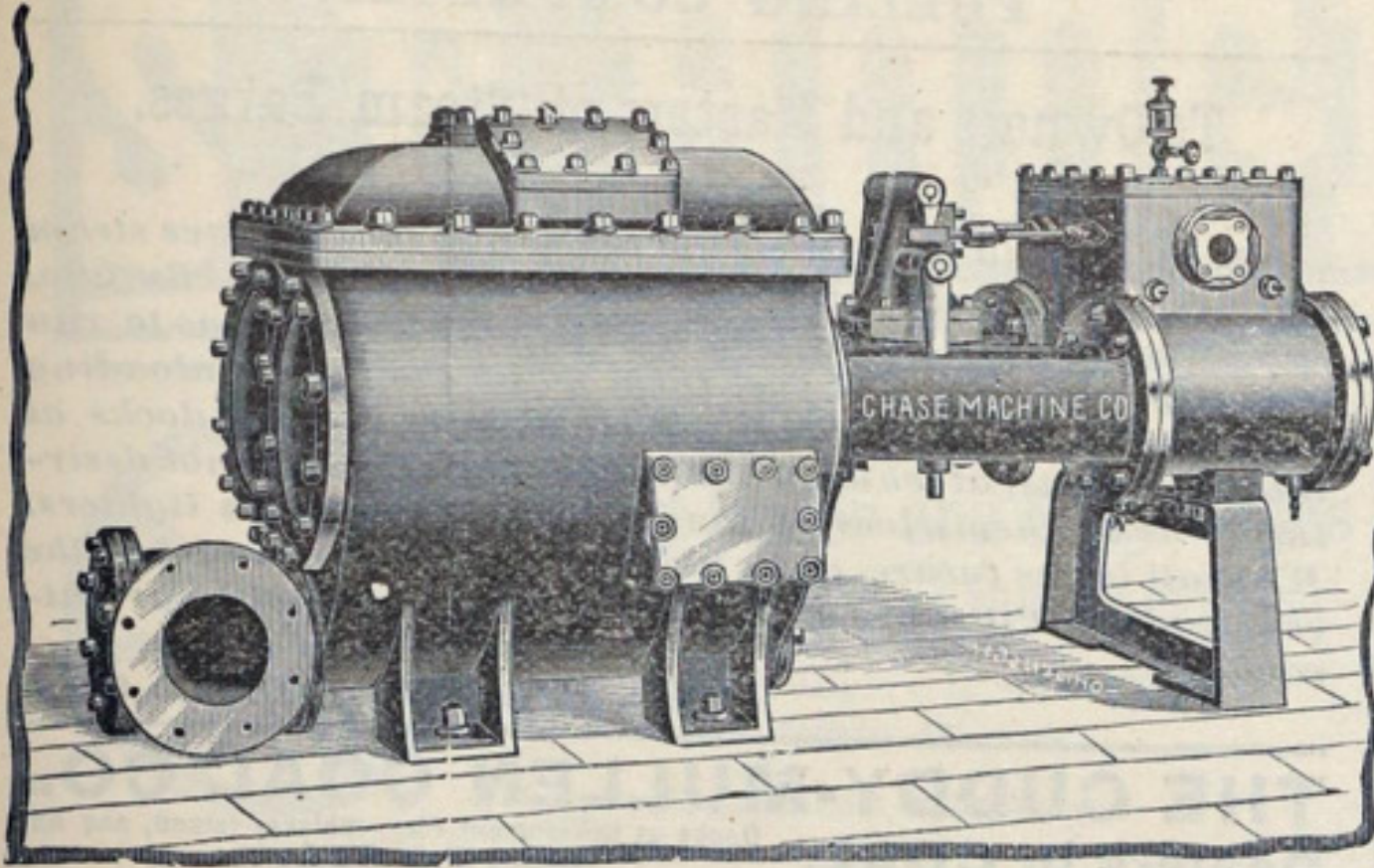
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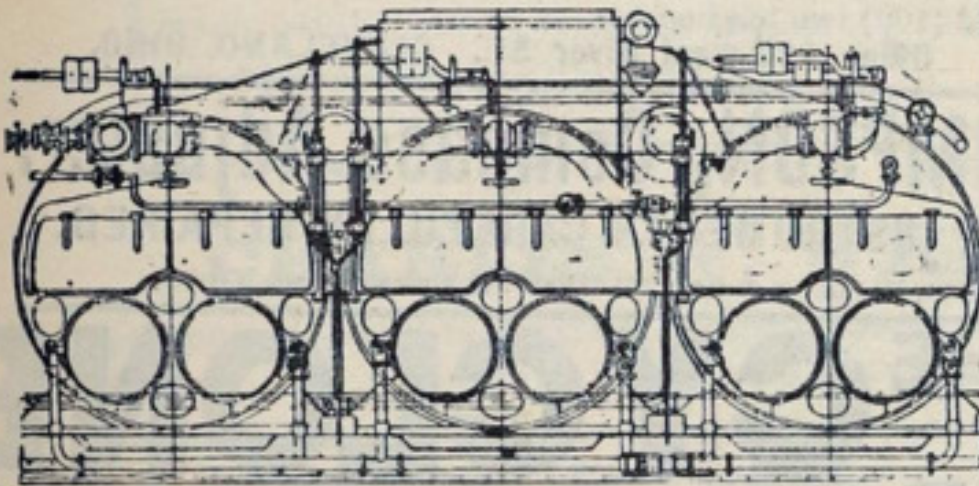
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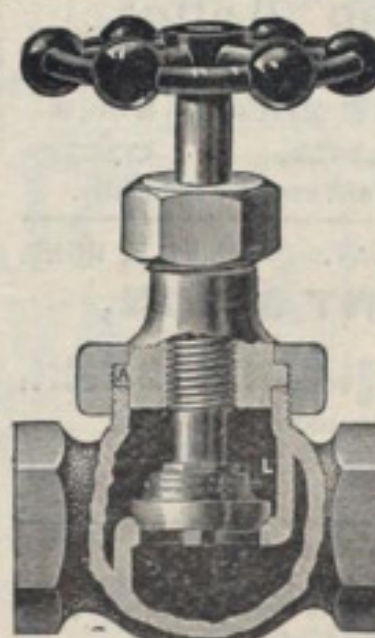
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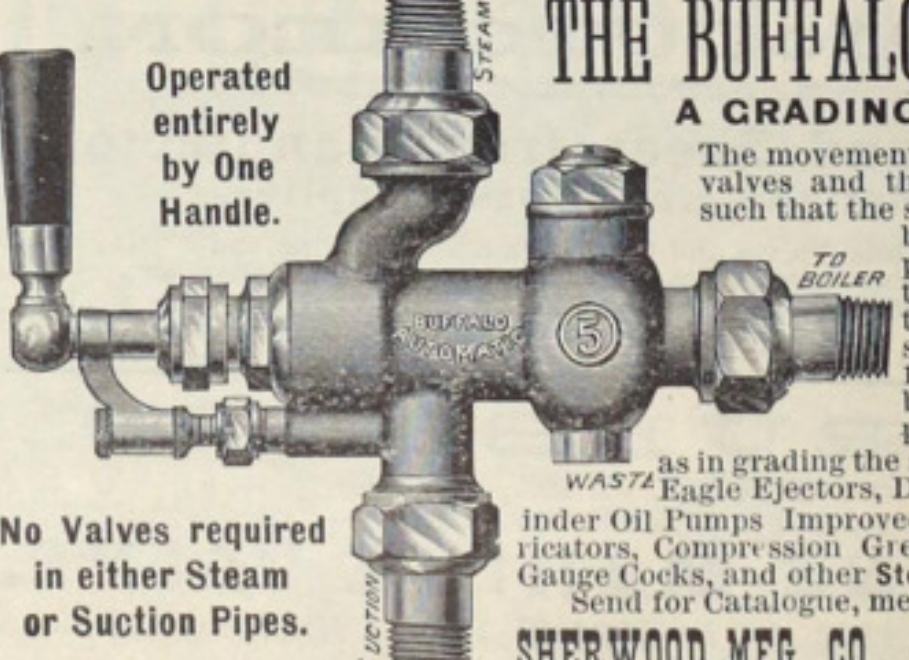


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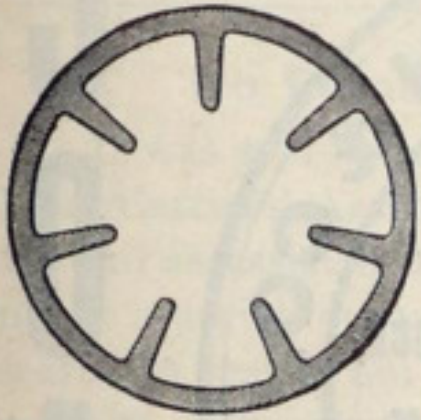
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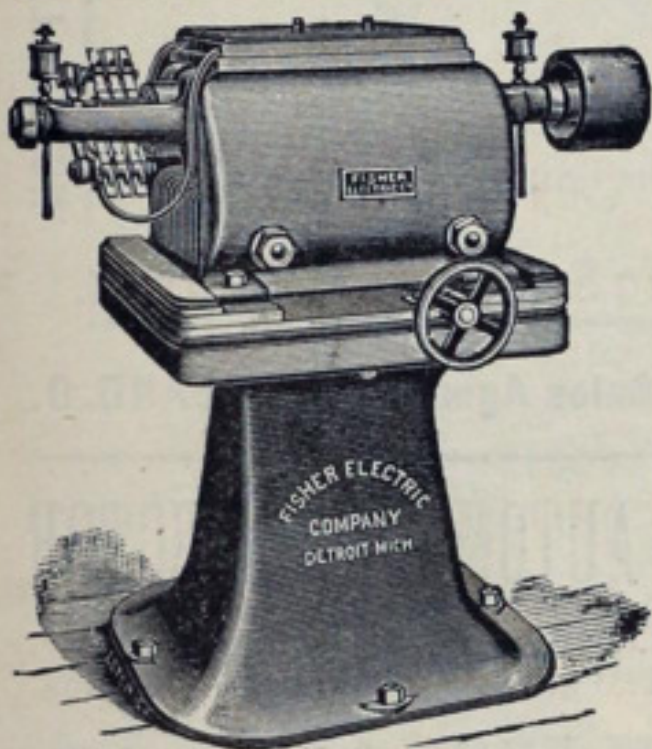
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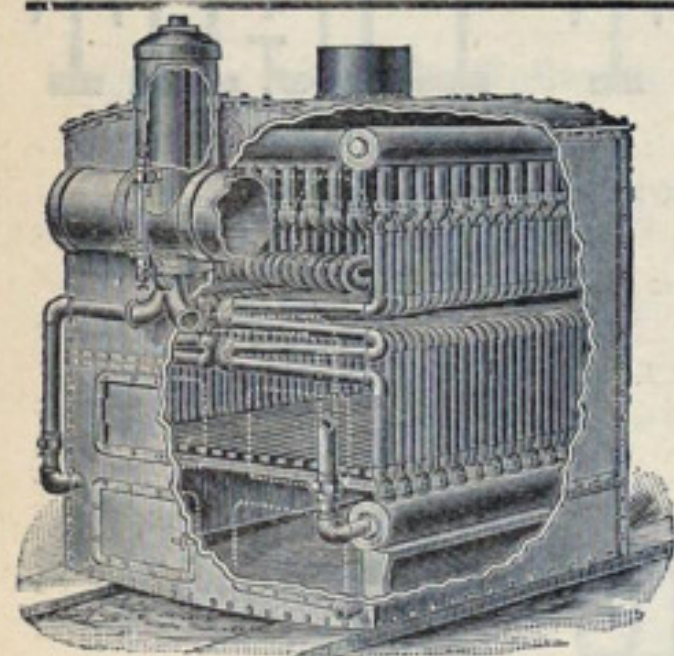
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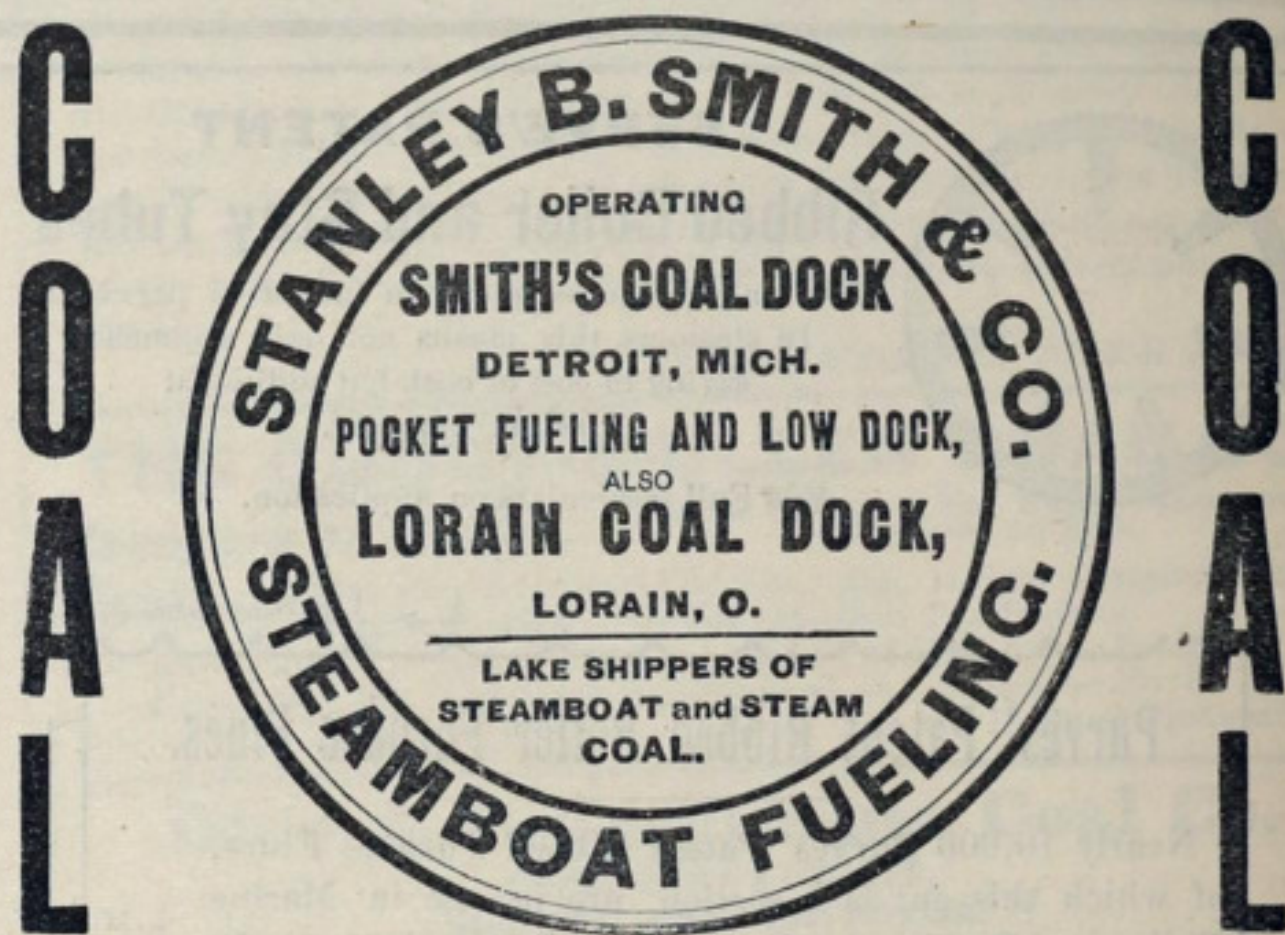
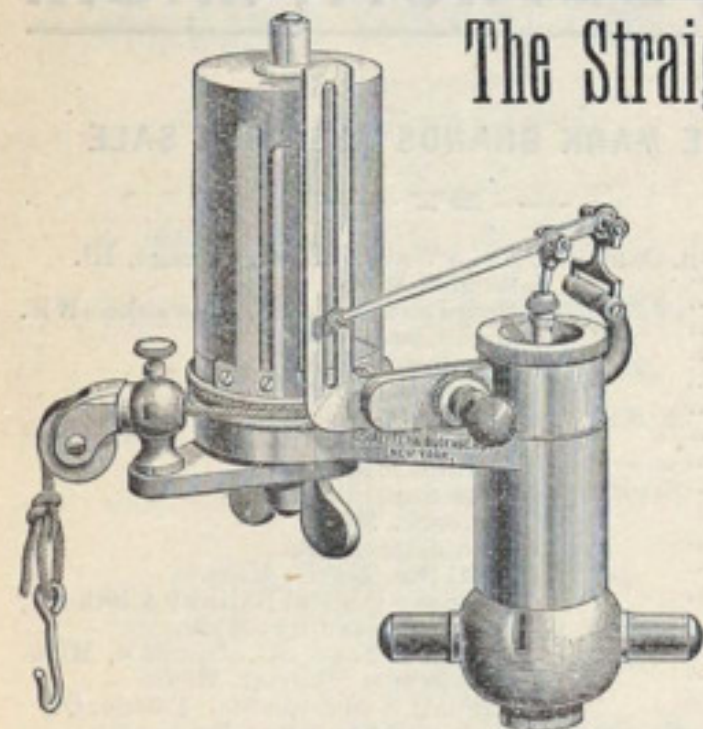
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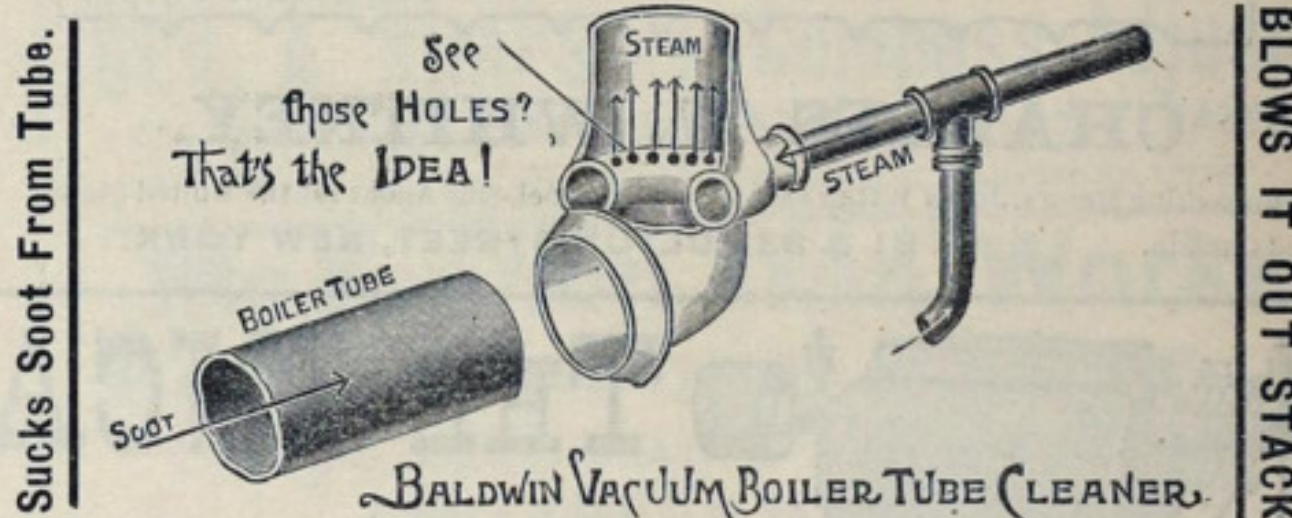
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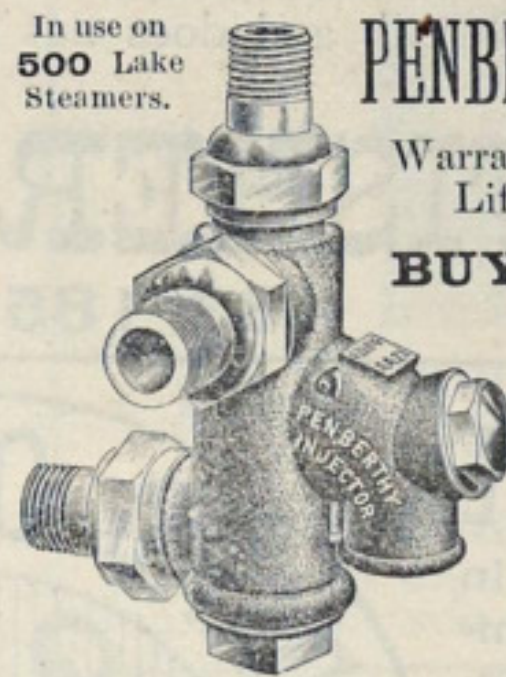
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